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AUTOMOTIVE INDUSTRIES

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VOL. XLIX

NEW YORK—THURSDAY, OCTOBER 4, 1923

No. 14

New Models Make Appearance at Closed Car Show

Price differentials from open types are smaller than ever before. New York dealers stage third annual exhibit. Nearly all prominent makes represented. Designs successfully combine quality and relatively low price. Good crowd on opening night.

THE reduction in price differentials between open and closed cars which has been going on for several years was strikingly illustrated at the Third Annual Closed Car Show of the Automobile Merchants' Association, Inc., which opened at the Grand Central Palace, New York, last Saturday, to continue for a week. Forty-three makes of cars were exhibited, including most of the new models which have recently been brought out and several previously unannounced even to the trade. Nearly every make showed at least one closed model in which some definite effort has been made to cut down the production costs, and the designs exhibited bear witness to the success of manufacturers' efforts along this line. There appeared an equally definite tendency to avoid cheap looking constructions. Even the models with the smallest price differentials over the phaetons had nothing about them to make the casual observer remark, "There is one of those cheap closed jobs we have been hearing about."

A fair sized crowd was on hand to view the exhibits, although no difficulty was experienced in walking through the spacious aisles of the Palace. First impressions indicate that the show is superior to the two previous ones in appearance, size of attendance, and quality of sales effort.

Aside from a section devoted to maps and models of traffic relief suggestions for New York City, the show was confined entirely to closed cars. The vari-

ous individual exhibits were tastefully arranged and a number of conservatively painted special bodies were in evidence. Brilliantly colored "show jobs," however, were conspicuous by their absence, and there were no ribbons over the hoods to discourage examination of the engines.

A special feature new to local automobile shows was a vaudeville entertainment staged every evening on the second floor without additional charge to show visitors. This attraction was put on about 10 or 10.30 o'clock each night and served to keep many people in the building much longer than they might have stayed otherwise.

THE first-night crowd was very good, considering the handicaps under which publicity for the show had to be handled. A pressmen's strike in New York, lasting for two weeks and ending only two days before the show opening, resulted in a fortnight of combination dailies of limited size. Consequently a large part of the newspaper campaign which had been planned to tell the public about the exhibition had to be abandoned. Other methods of advertising were used to advantage, however; and the result was all that could be expected.

Most of the important cars were represented among the forty-three exhibitors, but several prominent makes were absent. New models have been added recently to some of the lines which were not shown.

Cars Exhibited at New York Closed Car Show

Apperson	Durant	Jordan	Packard	R. & V. Knight
Auburn	Essex	King	Peerless	Star
Buick	Flint	Kissel	Pierce-Arrow	Stearns
Cadillac	Ford	Lincoln	Nash	Studebaker
Chalmers	Franklin	Locomobile	Oldsmobile	Stutz
Chandler	Gardner	Marmon	Reo	Velie
Cleveland	Gray	Maxwell	Rickenbacker	Wills Sainte Claire
Cole	Haynes	Moon	Rolls-Royce	Winton
Dagmar	Hudson			
Dort				

Dodge, Overland, Willys-Knight, Oakland, Chevrolet and several others were absentees.

The show should be of considerable benefit in stimulating fall business in the metropolitan area, especially for those dealers who are in a position to get deliveries on closed models within a reasonable length of time. Many dealers can do this, although a marked shortage of closed models, especially among the newer creations, still exists in certain lines.

Salesmen were active at nearly every booth, and many names were added to prospect files on the opening night. Selling effort was not so pronounced, however, as to make it uncomfortable for those who desired to see the cars without being unduly pressed for an immediate decision to purchase. A noticeable lack of real information about the cars still exists on the part of many of the salesmen. A good many of them have a certain line of facts which appear to have been learned by rote, but exhibit little actual understanding of the car which would enable them to answer queries not included in their instructions.

NEW radiator designs have been numerous this year, and the showing of them all together made an interesting feature of the show. Among these were new or modified constructions on the Studebaker, Cleveland, Buick and Dort.

The show served to introduce a number of new body jobs entirely new to the trade, among them a Maxwell Club sedan with two doors, 3 ft. wide; a Durant two-door, five-passenger coach; a Jordan two-door coupé; a Dort coupé-brougham and sedan; an R. & V. Knight two-door coupé; a Gardner three-door brougham; an Auburn five-passenger sedan and seven-passenger sedan; a Stearns five-passenger sedan on a four-cylinder chassis, and a Lexington five-passenger sedan with two additional folded-in seats.

New Maxwell, Durant and Dort models were additions to the low priced closed car lines which many manufacturers have presented in the past two years.

The show management utilized one whole side of the second floor, comprising several thousand feet, for an additional exhibit which was entitled "New York of Tomorrow." The exhibit in this section was composed of photographs, maps and models intended to show that "There will always be room on New York City streets for the lawful and careful use of automobiles."

Balloon tires made their first appearance at an automobile show, models from the Moon and Cole line being equipped with the large section low air pressure tires. While experimental work has been going on with balloon tires for some time, these two cars are the first to be

regularly equipped with this type. On both Moon and Cole an extra charge, ranging from \$125 to \$150 is made for the large equipment.

JORDAN showed a new two-door Victoria coupe selling at \$2,285, finished in "Crane-Simplex" dull luster. The doors on either side are quite wide and the seating arrangement, while of the staggered design, allows the driver's seat to be squarely behind the steering wheel. The tilting seat is full upholstered, to give maximum comfort, but still retains the tilting feature. A large carrying space is provided, in addition to the trunk, which contains two suitcases. An option on the finish is similar to all Jordan closed models, dark blue high finish or "Crane-Simplex."

The 1924 Studebaker line, announced a few months ago, was shown in full so far as closed models are concerned. The distinctive radiator, with shoulders forming square corners, is a feature of the new line, and this is so different from the former design as to give the car a quite different appearance.

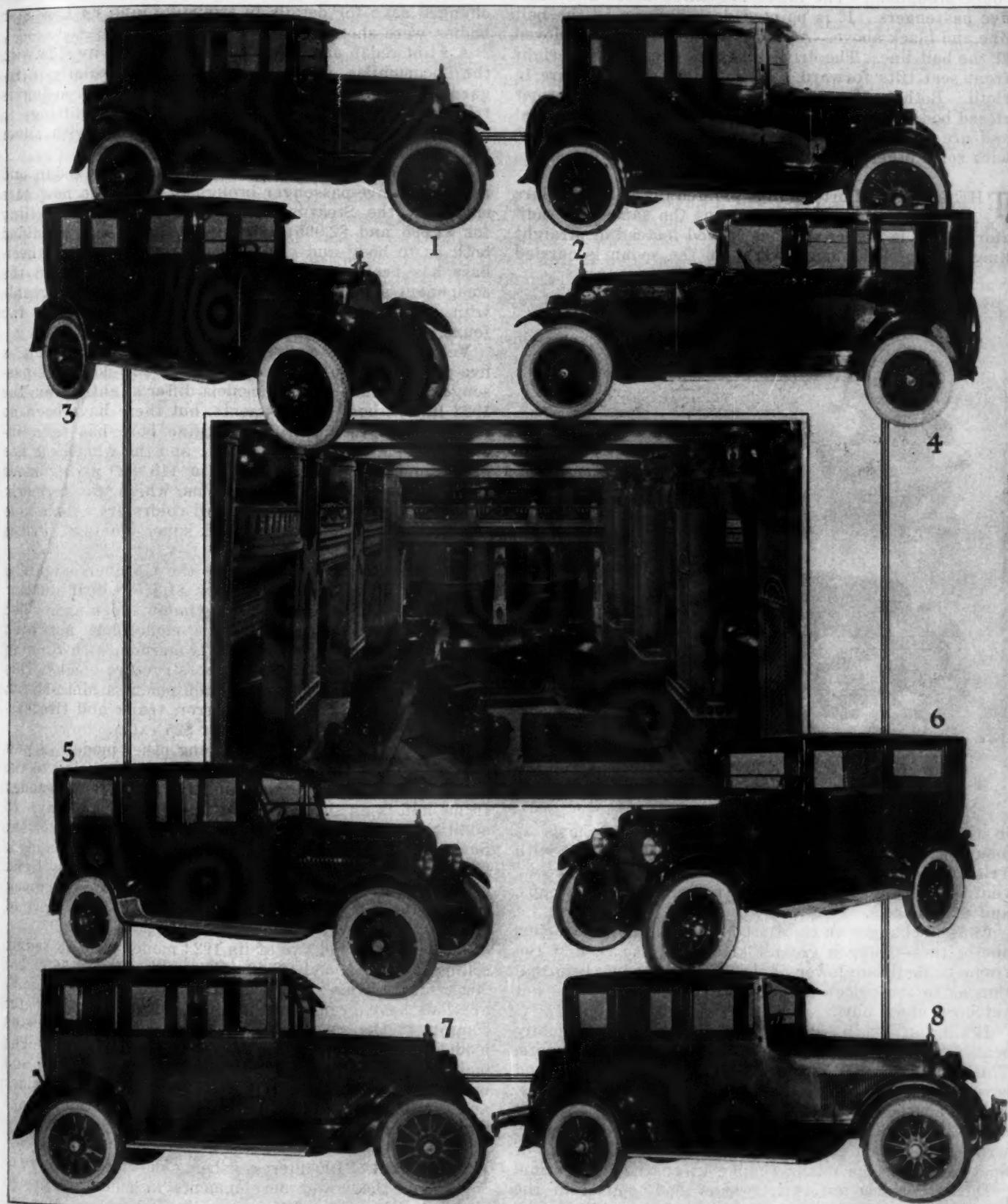
Buick exhibited a full line of closed cars which are new this year, but which were described in these columns last August. One detail of this exhibit which caught the eye was the natural wood finish on the wheels of the Model 51 five-passenger sedan. This job, in common with some of the other Buick closed cars, was finished in maroon with black superstructure.

NEITHER Hudson nor Essex showed anything new except for nickel radiators, applied as special equipment by the local branch.

Of particular interest in the Maxwell-Chalmers exhibit was an entirely new Maxwell body termed the Club Sedan, which lists at \$1,045. This is a two-door job, but the doors are a full three feet wide and form nearly half of each side of the body. Both front seats are arranged to tilt forward, but on account of the great width of door it is quite easy to reach the rear seats without disturbing occupants of the front seats. The doors are hung on four hinges and have a brilliant red stripe at the belt line. This stripe is not carried around the body.

Windows, which are about the same width as the doors, extend almost back to the rear corners, leaving only narrow quarter panels. These windows are fitted with regulators. Upper rear and quarter panels are covered with fabric leather, and interior trim, including side and head linings, as well as seat upholstery, are done in "granite pebble" cloth. The transverse ribs of the top are exposed and finished in walnut. Disk wheels are standard equipment. The Maxwell Travelers sedan is continued without change, as is also the Club coupé.

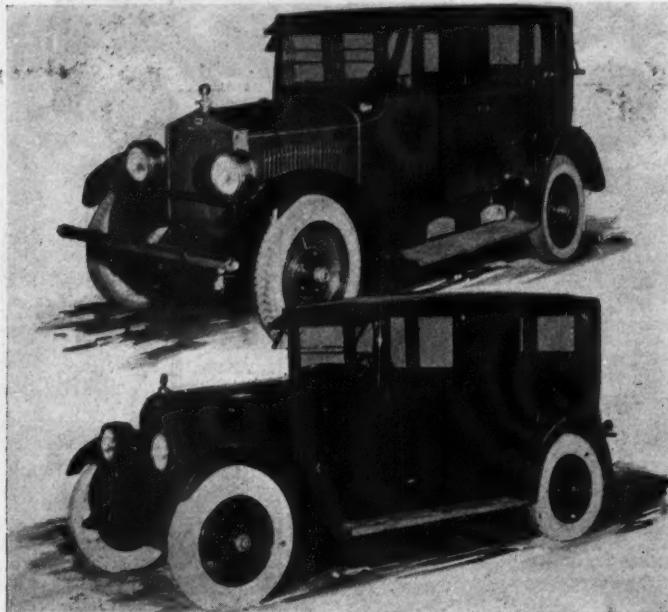
Eight Models Make Their First Appearance



General view of recent New York closed car show and close-ups of some of the newer models exhibited.
1—New Dort coupe-brougham has three doors and metal upper quarter and rear panels. 2—New Durant coach has two wide doors and narrow deck with opening to space back of rear seat. 3—New four-door Dort sedan. 4—Auburn's new four-door sedan. 5—New Lexington sedan which normally seats five but has folding seats for two extra passengers. 6—Maxwell club sedan. Note extreme width of two doors. 7—Sedan on four-cylinder Stearne chassis. 8—Jordan sedan with dull finished body and fabric leather covered visor

Dort's line for 1923 will include two new body models on the six-cylinder chassis, a four-door five-passenger sedan of rather conventional type, and what is termed a coupe-brougham. The latter has three doors and seats five passengers. It is painted dark blue up to the belt line and black above. A gold hairline stripe is employed at the belt line. The driver's seat is fixed, but the right front seat tilts forward. All interior trimmings are in cloth. Both bodies are said to be wider than former closed bodies. Quarter panels on this body are of metal and are not covered with fabric leather as is the case with some other makes of bodies in the same class.

THE four-door Dort sedan is painted in the same colors as the coupé-brougham and has the same new radiator, which is higher and has curved instead of straight lines on top. The spare wheel on the sedan is carried



Moon (above) and Cole (below) are the first to exhibit balloon tires as standard equipment

in the rear, while that on the other body shown is mounted on the left side. Both models are fitted with Trico automatic windshield cleaners, cowl lights, cowl ventilators, Moto-Meters, with ornamental radiator caps, and disk wheels.

Chassis changes on the Dort are of a minor character, one of these being a greater kick-up at the rear of the frame to facilitate lower hanging of the body. Information as to the price on these two body models has not yet been given out.

Lexington exhibited a new sedan which normally seats five, but has extra folding seats for two passengers. This is understood to take the place of former five- and seven-passenger sedans, formerly included in this line. It lists at \$2,645. Chassis changes include use of silent chain in place of timing gears in the Ansted engine, wrist pins, which are fastened in the piston instead of floating, and some minor change in engine lubrication.

Durant showed an entirely new body model in the form of a two-door coach listing at \$1,185. This is a five-passenger body with unusually wide doors and quarter windows. Doors have four hinges and front seats tilt to facilitate entrance to rear seats. Back of the rear seat is a short, sloping deck which is hinged at the bottom to give access to the rear compartment. This body is trimmed in cloth. All exterior panels are

of metal. Door and rear side windows are fitted with regulators. Wheels are of wood, artillery type, with the usual metal felloe.

Other Durant closed models remain practically unchanged save for details in trimming, and no new Star bodies were shown.

A Flint sedan and coupé were shown side by side with the Locomobiles, which they resemble, especially in regard to radiator and hood lines. The Flint sedan is trimmed in blue mohair velvet with interior fittings to match, while the coupé has gray trimmings with silver fittings.

Two four-cylinder models, a five-passenger sedan and a two-door five-passenger brougham, were the new cars shown at the Stearns exhibit. These models, selling for \$1,995 and \$2,095 respectively, have been modified both as to body and chassis construction. The wheelbase has been shortened from 125 to 119 in. and the component parts of the chassis are now interchangeable with the six-cylinder models, which means that the four-cylinder chassis is heavier than formerly.

Velie displayed a five-passenger standard sedan, a five-passenger touring sedan, and a two-door five-passenger brougham. These models differ slightly from the 1923 line in body appointments, but there have been no radical changes made. The engine bore has been increased from $3\frac{1}{8}$ in. to $3\frac{3}{16}$ in. and the wheelbase has been lengthened from 115 in. to 118 in., giving more room in the tonneaus. The frame, which was formerly 5 in. deep, is now 6 in. Standard colors are cobalt blue or gray below belt line and black superstructure. Prices remain unchanged.

One new model was shown at the Gardner exhibit, a three-door brougham, selling for \$1,345. Rear quarter panels are of metal without window openings. The mechanical construction of this model has not been changed. Standard paint finish is maroon, with running gear, fenders, splashers and superstructure black. This new model carries as standard equipment a Moto-Meter, windshield visor and wiper, mirror, trunk and tire carrier. Tuarc wheels are fitted for \$25 extra.

R. & V. Knight displayed, among other models, a new two-door five-passenger coupé, the latest addition to the line. This model has an aluminum body with wooden frame and is finished in cobalt blue or pelican gray. In addition to the built-in trunk, which is a feature of the new R. & V. Knights, standard equipment includes a windshield visor, mirror, cowl ventilator, dome light, cigar lighter, spotlight, Moto-Meter, snubbers, bumper, tire carrier and spare tire, tube and cover. The price of the new coupé is \$3,000.

Auburn exhibited two of its 1924 models, a 6-63 sedan, selling for \$2,345, and a 6-43 sedan, selling for \$1,595. The mechanical changes are minor in nature and a few modifications have been made in the bodies to give greater comfort to the passengers. The wheelbase of the 6-63 model has been increased 2 in., making it 124 in. The body is made of aluminum panels to reduce weight and is built by McFarlan. Windows have been made wider and the doors have been fitted with chain action checks which fit into the body when doors are closed.

CONSIDERABLE interest is being shown in some five or six of the newer developments in moderate priced closed models. Two of these are the Durant and Maxwell jobs, known respectively as the Coach and Club sedan. Both of these have exceptionally wide front doors, which form, in each case, nearly half of each side of the body. The great width is, of course, intended to facilitate entrance to both front and rear seats, but both jobs are fitted with tilting seats, although it is possible in at least one case

to enter and leave the rear seat without disturbing passengers in the front seat.

In other recent designs, notably the new Gardner three-door brougham and the new Dort three-door coupé-brougham, this problem has been met by applying an extra door instead of depending upon a single door on each side for entry and exit. This construction leads to what may be termed a three-panel instead of a two-panel side.

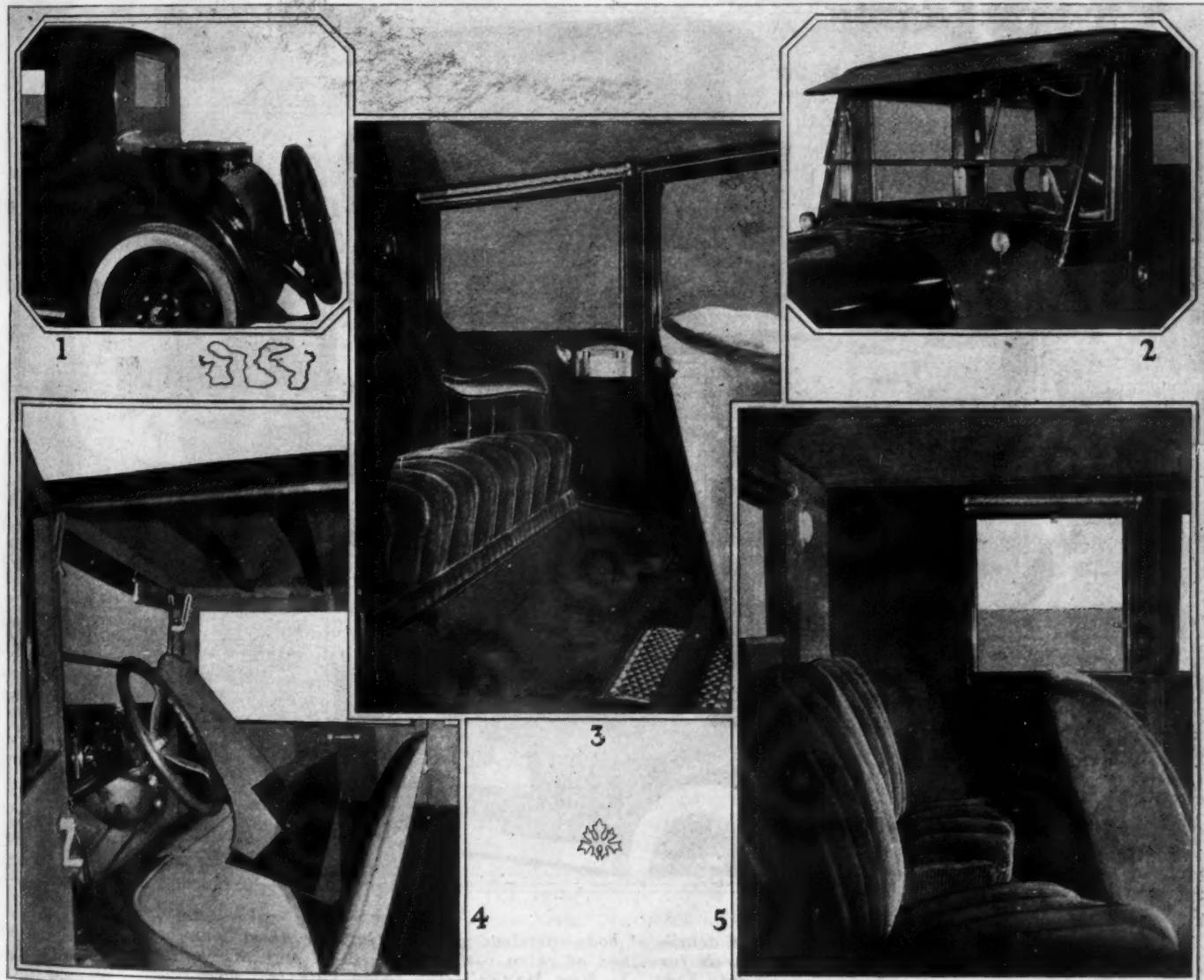
Of the three moderate price closed bodies just discussed, all but the Maxwell have metal upper quarter and rear upper panels. In the Maxwell body the quarter and rear panels are covered with fabric leather to match the top, a construction which has been used on Hudson and Essex coaches, among others, for some two years.

There has been considerable talk of trimming the interior of closed jobs with artificial leather, especially for side and head linings on bodies intended primarily for business and utility purposes, but few manufacturers have adopted as yet this practice. Woolen fabrics of the broadcloth type or other somewhat similar materials are employed in cases where velvets or mohairs are precluded on account of cost.

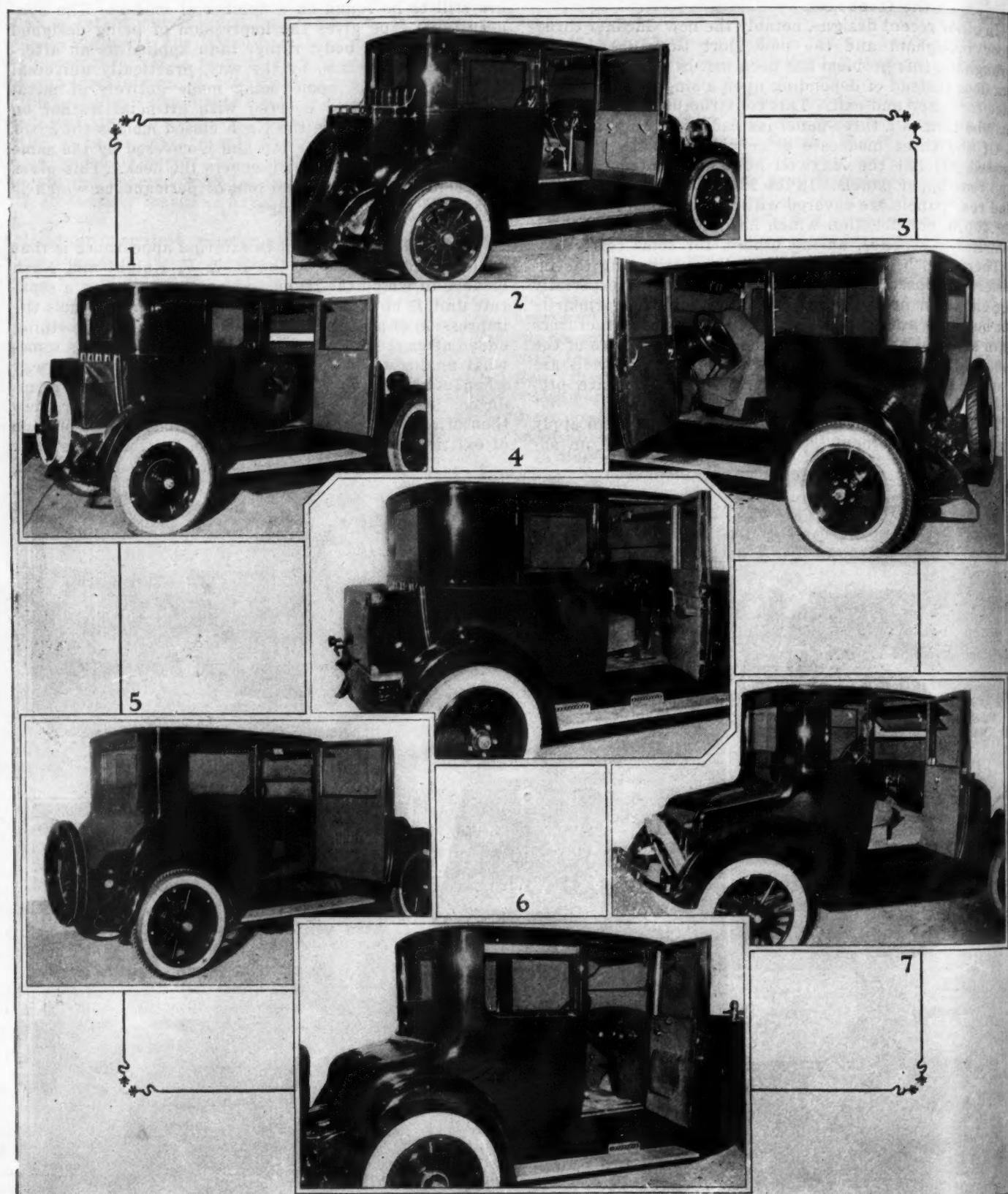
There appears to be a more general tendency to apply visors of a permanent type rather than those of an ad-

justable type, which were formerly used extensively and are still to be found on a number of models. The non-adjustable type gives the impression of being designed as a part of the body, rather than applied as an after-thought. Visors are, by the way, practically universal on closed models, some being made entirely of metal and others of metal covered with artificial leather on one or both sides. In the Nash closed models the visor is built as a part of the top and is covered by the same strip of top material which covers the deck. This gives a pleasing appearance and one of permanence which is lacking in some other designs.

ANOTHER improvement in external appearance is that obtained in some of the R. & V. Knight and Nash models, in which the trunk, ordinarily carried as a separate unit, is built into the body. Here, again, one gets the impression of a permanent fixture, rather than something added after the body is complete. This situation is somewhat analogous to that obtaining in a mechanical way when starting and lighting equipment was first introduced. The starting motor and lighting generator were then often applied as extras that fastened to the outside of existing powerplants, while these units now are built



Some details of bodies exhibited at the New York closed car show. 1—Trunk on Nash coupe (termed the "Victoria") is built into rear deck. 2—Visor on Nash closed jobs is a part of the roof structure. 3—Interior of Flint sedan is trimmed in blue mohair velvet with fittings to match. 4—Interior of new Maxwell club sedan trimmed in granite pebbled cloth. Note wide front door, tilting seats and exposed roof ribs which are finished in walnut. 5—Interior of Nash "Victoria" model, showing the corner seat for a child, back of driver's seat. Note the rather small window



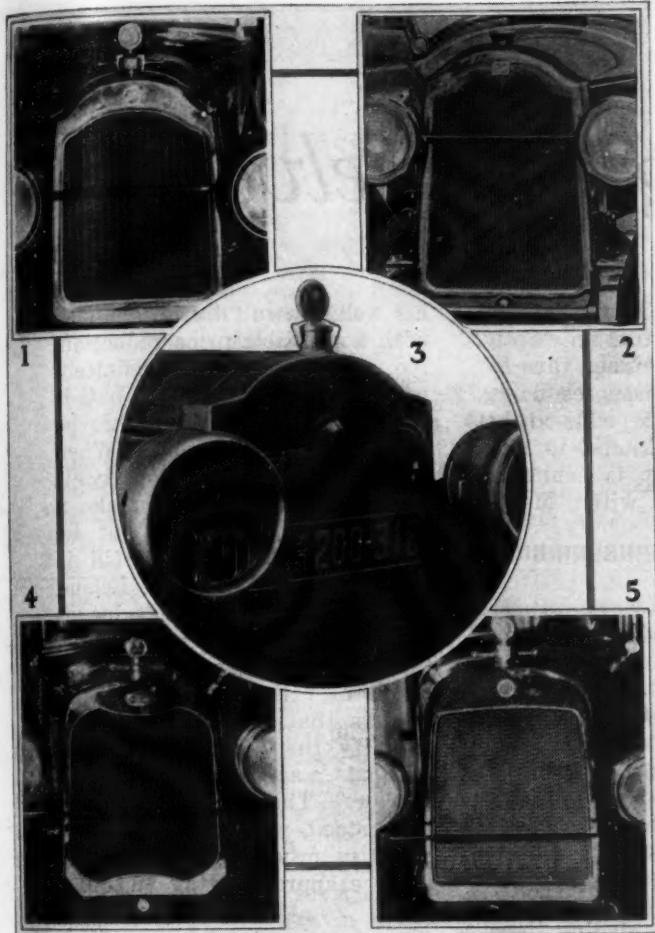
A group of closed cars showing various details of body construction. 1—Gardner three-door brougham with metal upper rear panel. Disk wheels furnished at extra cost of \$25. 2—R & V Knight two-door, five-passenger coupe with trunk built into body. 3—New Maxwell club sedan with two wide doors, tilting front seats and upper rear panel covered with fabric leather matching that used on top. 4—Dort three-door coupe-brougham. Upper rear panel is metal. 5—New Durant two-door, five-passenger coach showing tilting front seats and compartment back of rear seats. 6—Flint coupe trimmed in gray with silver fittings. Note arrangement of instrument board and the trimmed arched panel above it. 7—New Ford coupe has narrow windows in quarter panels and extra large space under rear deck. It is generally agreed that this is much the best appearing body Ford has ever produced

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Five of the newer radiator designs, from which it will be seen that curved lines are popular.
1—Studebaker, 2—Buick, 3—Packard with Winter Front, 4—Cleveland, 5—Dort

into the engine, although designed for ready dismounting in case repairs are required.

Among the most popular colors used for the lower panels and hood are rather dark shades of blue and maroon. Buick, Chandler, Cleveland, Moon, Dort and Packard are examples of those using blue extensively. Buick also has several bodies finished in maroon, and among others using this finish are Gardner and Wills Sainte Claire.

In nearly all cases the superstructure, or that part of the body above the belt line, is finished in black, as are also fenders, splash plates, and the like. A number of all-black bodies are still in evidence, but a very large majority of makers offer certain options on painting in colors, at least on some models. Nearly all of the colors used are rather subdued, but are bright enough to avoid the funereal appearance of all-black products.

A FEW production models, especially in the higher price class, and quite a number of the custom bodies employ a dull or semi-lustrous finish. So far as we were able to learn, only one of the bodies in the show was finished with pyroxylin lacquer in place of varnish, this being one of the custom-built Marmon sedans. None of the Oakland models which employ this finish were exhibited, this being the only General Motors car, with the exception of Chevrolet, which was not at the show.

Practically all closed cars are now fitted with a form of window regulator, either of the crank, lever or notched-bar type. The last mentioned is being extensively used on the lower priced closed models, some of

which were formerly made with glass, which was fixed permanently in position.

Interior fittings are generally of a quite substantial and simple design, selected to harmonize with the trimming materials. One rather novel feature of the Kissel sedan is a metal handle at each corner of the front seat back, so placed as to be conveniently grasped by a passenger entering or leaving the rear compartment and still so placed as not to come into contact with the backs of passengers in the front seats.

A great majority of windshields are flat across the front, but a few designs in which panels are set at an angle to each other are to be seen. An effort has been made in some cases to decrease the width of front pillars and thus improve the vision obtainable by the driver, but there is still considerable room for improvement in this direction.

Another of the novelties produced in the Nash model termed the "Victoria" is the provision of a narrow seat for a child back of the driver's seat, space being allowed between this seat and the driver's seat back for the child's legs and feet. This is an improvement over some designs in which a package compartment with an upholstered cover is sometimes used as a child's seat.

In some of the coupés the upper quarter panels are without windows, but in others, especially those intended for four passengers, a rather small size but quite rakish appearing window is employed. In some cases this is square and in others elliptical. In a few cases a false top iron, resembling that used in landaulets in which the rear half of the top folds down, is employed for decoration only.

Nickel trimmings, especially on headlamps and radiator shells, are still being extensively employed, although enameled parts are used on many standard jobs.

A NEW type of heavy oil engine for marine and industrial purposes is being placed on the market by the Automatic Machine Co. To the side of the working cylinder there is a small chamber which communicates through an inlet valve with a small carburetor that is fed with gasoline. In the wall of this chamber there is a spark plug of the ordinary type and the chamber communicates with the working cylinder through a restricted opening. The regular inlet and exhaust valves are located in the cylinder head, and between them there is a fuel injection valve. The fuel, which consists of heavy oil, is injected into the cylinder at the beginning of the power stroke by mechanical pressure, the engine thus working with airless injection. Compression is carried at about 150 lb. per sq. in.

During the suction stroke a small quantity of combustible mixture is drawn into the firing chamber from the small carburetor referred to in the foregoing. The relative amount of this mixture may be judged from the fact that the amount of gasoline consumed is slightly less than 10 per cent of the amount of heavy oil used. At the end of the compression stroke the firing chamber is filled with a fuel mixture containing chiefly gasoline fuel, and this is ignited by the spark plug. A column of flame then shoots through the compression chamber of the working cylinder, and as the heavy oil is being sprayed into the working cylinder at the same time, this is ignited and combustion in the cylinder is initiated. Owing to the high compression, one might expect danger of pre-ignition, but evidently this is prevented by the comparatively narrow opening between the firing chamber and the cylinder. Owing to the high compression carried, about 10 per cent more power is said to be obtained with this engine than from an Otto type engine of the same displacement. The system of operation is known as the Werner system.

Just Among Ourselves

When Kettering Goes "Up in the Air" to Think

MOST executives in the automotive industry are busy men. Time is their most precious possession. Once in a while, beset on all sides by insistent visitors, one of them cracks under the strain and "goes up in the air." C. F. Kettering of General Motors is one of the busiest. Fellow officers of the corporation often stop at Dayton to see him. They stick their heads inside the door of his sanctum and find him too busy either to talk or listen. "Come back in ten minutes," they're told. In ten minutes they return but the man they seek is not in sight. "Where's Ket," they demand. "Oh, he's up in the air," replies one of his staff. It isn't meant in a figurative sense, however. Outside, far up over the laboratories, Kettering is circling around in an airplane. He has gone up where he can't possibly be disturbed, to think out some abstruse problem which requires intense concentration. The hazards of flight don't shake his mental equilibrium in the slightest.

Muscle Shoals Fight Probably Just Starting

WHEN the War Department sold the Gorgas steam plant near Muscle Shoals to the Alabama Power Co. the other day, thereby tearing a large hole in Henry Ford's offer for the government's property on the Tennessee River, AUTOMOTIVE INDUSTRIES asked a man in Sheffield who knows more about Ford's power development plans than anyone outside the Ford organization, whether he thought the automobile manufacturer would withdraw from the field. "Think skirmish ended and real fighting will begin," this man

wired back. That probably summarizes the situation aptly. While Ford has refused thus far to tell what he proposes doing, it's a pretty safe odds-on bet that he doesn't intend to quit. The Gorgas plant is connected only indirectly with Muscle

COMPETITION.

Keen competition.

Fierce competition.

The automotive industry has passed through the first two stages and reached the third.

Business has been so good for the last year and a half that there has been enough for everybody but the processes of competition have been going on just the same and different makers have been girding themselves, almost unconsciously, for the battle.

Watch the 1924 models! See how they behave and note the public reaction. Some of them will stand up and some of them won't.

Sales are not as good as they were. Used cars are beginning to pile up in some places. There are reports of manufacturers forcing stocks on their dealers.

Fierce competition is about to begin. "Just among ourselves," those who are not ready for it had best set their houses in order.

Shoals. It is not on the Tennessee river at all, but at the mouth of a coal mine several miles away and is operated with steam rather than water power.

Watch the Lincoln, Is Word in Detroit

SPEAKING of Ford, there has been a revival lately of speculation over a new model of

his well known "flivver" coupled with a probable price reduction. No one knows very definitely what he intends to do, but it should not be forgotten that he also owns the Lincoln. When he took over that property it was believed he would make a sharp price reduction, but he didn't and the Lincoln still is as much as it was in the Leland days. While Ford isn't loquacious about his business plans, the trade in Detroit has heard of late rather circumstantial reports that he has decided to simplify the Lincoln materially without sacrificing its high quality. These changes, it is understood, would make possible quantity production and permit a price approximating \$2,500.

Fort's Family Tours, But Not on Trains

GERIT Fort, vice president of the Boston & Maine Railroad, has no illusions about the motor vehicle. He knows it has come to stay. As he phrases it, the railroads have given a goodbye kiss to the passenger business they have lost to the private automobile. "My own family, which can ride free on all railroads, have traveled all over New England the last two summers," he said the other day, "and they haven't ridden a mile on a railroad." That's a mighty frank admission for a railroad man and it's a confession of the superior flexibility of motor car as compared with rail travel. The strange part is that it doesn't appear to have reduced materially the number of passengers carried by rail. It seems to be getting harder all the time to find a seat in a Pullman car or a day coach. That was true last summer, when there were more motor car tourists than ever before.

More or Less Pertinent Comment on Topics of Current Interest to Men in the Industry

Parts Makers Foregather With Prison Association

THE Motor and Accessory Manufacturers' Association seems to choose odd playmates in the way of conventions. At Boston, this year, the American Prison Association was considering penal reforms while the M. A. M. A. was discussing problems of the automotive industry and the New York State Undertakers' Association was talking over the latest styles in caskets while the M. A. M. A. was at Buffalo last year. There were no joint conferences, however. The nearest thing to one was the session at which Sid Meyers, the general counsel, told what to do in the event of bankruptcies, etc. This subject, for some reason or other, led him to cite, as his idea of unmitigated nerve, the chap who was accused of the murder of his father and mother and asked the court for mercy on the ground that he was an orphan.

Want Real Convention of Entire Industry

REFERENCE to conventions brings to mind the fact that certain widely known manufacturers in the parts field are working out plans for a convention of the entire industry within the next year. They want to bring together manufacturers of cars and trucks, parts and accessories, jobbers, distributors and dealers for consideration of common problems. They believe such a conference would do much to wipe out baseless antagonisms and prejudices. As Ben Asch expresses it, everybody should be calling everybody else by his first name. Incidentally, he's setting a good example for his associates. The nearest the industry comes to a general convention now is at the time of

the New York and Chicago shows. They do a lot to develop good feeling but everybody is too busy to spend much time getting acquainted.

Vanishing Profits Force Little Tire Makers Out

EXCESS production capacity is the curse which has blighted the tire industry. The little fellows blame the big fellows and the big fellows blame the little ones, but it all works back to the same point, which is that the factories can make more tires than the country can absorb. Some of this capacity is being eliminated day by day, however, as prices sink lower and lower and profits reach the vanishing point except for those who can keep costs down by a huge output and sales approximately as large. Scarcely a day passes that some small company doesn't go to the wall. It's tragic for them that they can't meet the competition but it reduces tire production and brings production capacity nearer to demand. The big question is: Will they stay out or will they be lured back when the business becomes highly profitable again, as it will sooner or later?

American Engineers Study New Foreign Products

AMERICAN engineers and executives are showing greater interest in foreign design this year than in some time past. Officials of various companies have made pilgrimages to France and England during recent months and several delegations are on the other side now to investigate first hand the latest products of European design. Perhaps the installation of four-wheel brakes has had something to do with this increased desire for knowledge of

foreign construction, since European makers have already had considerable practical experience with these brake mechanisms. Perhaps the growing keenness of domestic competition has given impetus to the search for new ideas in other lands. Perhaps a curiosity to visit scenes made historic by the World War has more than a little to do with the exodus. Whatever the cause, the automotive industry will be well represented at the Paris and London shows this year.

Twenty Years Ago They Thought One Brake Enough

A PROPOS of the four-wheel brake controversy, here's an extract from an issue of Motor World back in 1903: "Two brakes are better than one, they tell me, but for my part I'll take one brake that I know is all right in preference to two that are doubtful," remarked the motorist to the Motor World man. "Perhaps I've been unfortunate with cars having two brakes and just the reverse with the one brake kind. Anyhow, I've always found that with the latter I keep the brake in perfect order, ready to bring the car to a stop whenever I jam on the brake. I always know what to expect. But with two brakes I was always having narrow escapes. The brake I used regularly might become a little worn and need adjustment. 'I'll fix that,' I would say to myself and then put it off to a more convenient season, reflecting that I had the emergency brake to fall back on. Then if I did have to make use of the emergency it was never just right. Disuse interferes with efficiency. Two brakes are all right if they are used constantly, but otherwise they are a delusion and a snare." J. D.

Success of Supercharger Chief Feature of European Grand Prix

Murphy, driving a Miller racer, makes good showing on Monza speedway. German Benz entries create favorable impression. Fiats' ability to accelerate rapidly gave them a very decided advantage. Winning cars used new type tire built by Pirelli.

By W. F. Bradley

THE triumph of the supercharged engine is the outstanding technical feature of the European Grand Prix race run Sept. 9 on the Monza track and resulting in a victory for Charles Salamano in an eight-cylinder Fiat, at an average of 91.03 miles an hour, with his team mate, Felice Nazzaro, only 24 sec. behind.

Although all the competition was confined to the three Fiats and to Murphy's Miller, the race was never lacking in interest, for Murphy handled his car in a manner which drew forth the admiration of the Italian crowd and the three Fiat drivers fought among themselves as keenly as if they had been members of rival teams.

Thirty miles from the end Nazzaro looked like a winner with a margin of one minute when he fractured an oil feed pipe and was obliged to stop for a supply of oil. Salamano, who had been gaining ten seconds per lap, closed up on his companion and when the last lap began the two Fiat drivers were neck and neck. Drenched in lubricating oil, Nazzaro had to slacken speed during the last three miles, and Salamano crossed the line with a lead of 24 sec.

Although he was beaten, Murphy worthily upheld the American colors. He went through the race without a stop except for tires and gas. Apart from the three Fiats and Murphy's Miller, the others never figured from a speed standpoint.

Two days before the race Martin de Alzaga went into a turn at too high a speed and struck a tree. The left frame member was bent and the differential housing was broken. The Isotta-Fraschini Automobile Co. of Milan placed its factory and staff at the entire disposal of the Miller team, and by working all night under the direction of Riley J. Brett the car was got ready in time for the race, but it was not in the same mechanical condition as Murphy's machine.

Unfortunate Delays

Count Zborowski, after working on his car on Brooklands track, sent it on the 1000-mile journey to Milan aboard an automobile truck. On the way down the truck broke its steering gear, sheared the keyways on the differential shafts, burned out its brakes and lost a tire, with the result that the racing car was late in reaching Milan. In practice the first speed pinion burst, and as a new one could not be made the Miller started out with only two gears. Zborowski experienced plug and carburetor trouble, and never got better than seventh position among the fourteen competitors. He went out soon after covering sixteen laps with a failure of the oil pump which led to a broken connecting rod.

The three sleeve valve Voisins which were built for the French Grand Prix failed to make any showing. De-

veloping not more than 75 hp., they were the slowest cars on the track, and after being overlubricated to such an extent that they sometimes were hardly visible for smoke, they all three went out with bearing troubles. Gabriel Voisin had announced before the race that he had not come with any expectation of winning, but merely to gain experience.

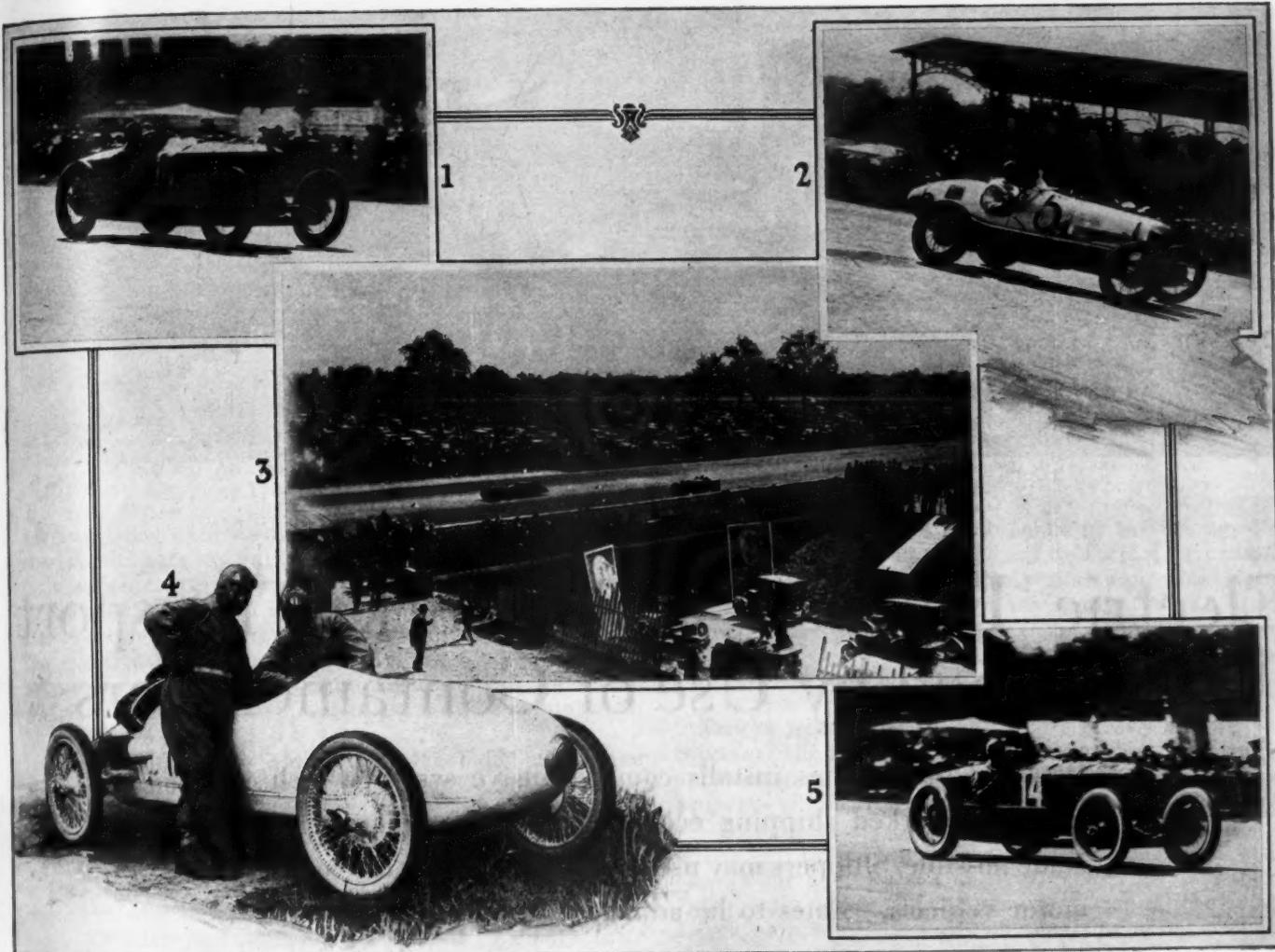
Guyot Forced Out

Delalandre, formerly mechanician to Victor Hemery, took the wheel of one of the eight-cylinder Rolland-Pilains and made an indifferent showing until he was forced out at less than half the distance with a broken roller bearing in the engine. Albert Guyot, on the same make of car, was held back at first by plug trouble. From fourteenth position he worked up to seventh place after sixty out of the eighty laps, when he had to abandon owing to severe burns to his left foot, which had been in contact with the hot exhaust pipe. Delalandre took his place and immediately began to fall back. Soon after a member of the jury stopped the car on the ruling that a change of driver was not allowed. It was recognized after the race that this was a mistake.

The three Benz cars, built on the Rumpler design, made their first appearance in an open event, and although slower than the Fiats and Murphy's Miller they made a very good impression. Walb retired early with a broken piston, but the two others, driven by Minoia and Horner, made an excellent display and were running when the spectators invaded the track after Murphy had cut the line. Minoia, the Italian driver of the German Benz, kept right behind Murphy throughout the race, being thus fifth until Bordino went out and fourth afterward. Until half the distance the German car was within three minutes of the American machine, but from this point Murphy got away until he left the German 18 min. behind.

The Benz had very pleasing lines, with the gas tank in front, the driver and mechanician in the center and the engine and gearbox at the rear. The radiator was back of the driver, across the car, and surmounted by a pointed water tank. An oil radiator projected on one side. With independent axle shafts, the car gave a very curious impression as it went over the bumps at speed, for the first suggestion as the wheels rose and fell independently of one another was that the axle was going to buckle up on itself. The cars held the track well. The rear end, which is Rumpler's distinctive feature, gave great satisfaction, but the drivers held the opinion that the steering could have been improved.

Benz used a six-cylinder engine, the cylinders being separate steel forgings with a separate steel water jacket for each, and were obviously a war development with aviation engines. Plain bearings were used and, so far



1. Charles Salamano driving his Fiat in which he won the European Grand Prix with an average speed of 91.03 m.p.h. 2. Jimmy Murphy, driving a Miller racer, placed third in the big event. 3. This view of the Monza Speedway on the day of the race indicates that Europeans, as well as Americans, often like to drive with the top up. 4. German Benz racer, built to Rumpfer license. This is a six-cylinder car and is said to have held to the road particularly well. 5. Bordoni in a Fiat

as could be judged from an external examination, there was nothing unusual in the design.

Fiat admits that its success was due entirely to the use of the supercharger. Salamano's average of 91.03 miles an hour for practically 500 miles is a European record and, although not as fast as the average at Indianapolis, this is due entirely to track conditions. While one portion of the Monza track is copied on Indianapolis and is slightly faster than the Hoosier Speedway, another part is decidedly slower and calls for the use of gears if the best speed is to be maintained. Acceleration was of the greatest importance, and it was here that the Fiats had an immense advantage over Murphy's Miller.

Gear Ratio Changed

On the day before the race Fiat changed the final gear ratio to cut car speed down 7 per cent, this being done to avoid any possibility of overspeeding the engine. Despite this Felice Nazzaro set up a record lap at 98.1 miles an hour and later Salamano ran off a lap at 98.9 miles an hour.

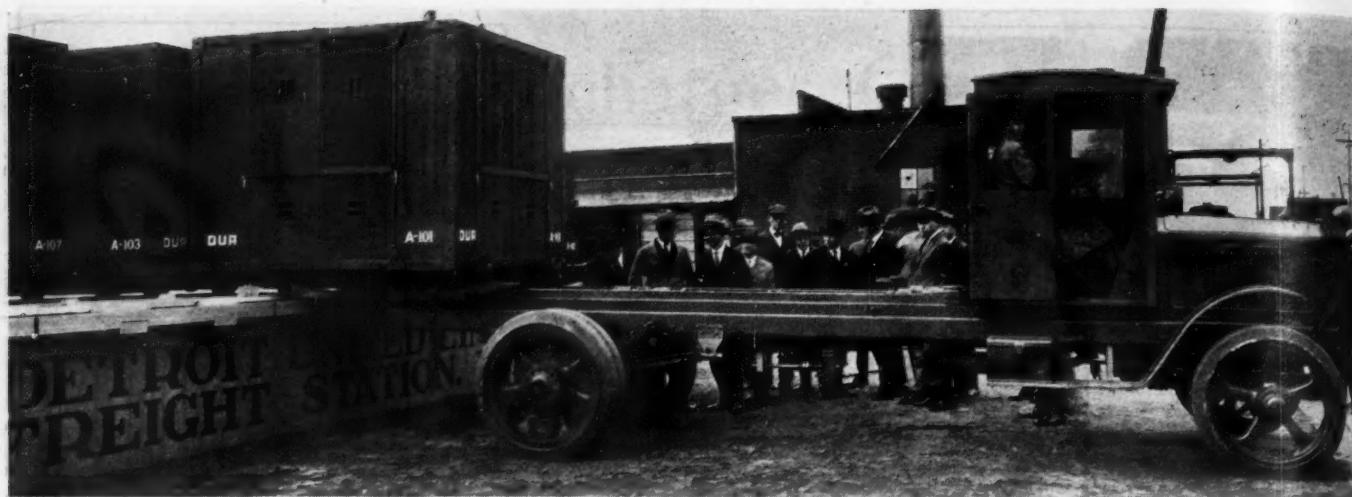
Fiat used the cars which had been defeated in the French Grand Prix at Tours, with certain modifications in the engine which made it impossible for the blowers to seize up even if in dust. There was no mechanical trouble, the three cars running 1250 miles without the hoods being lifted, and the average speed of all three for the first 250 miles of the race being better than 94 miles

an hour. Although there is apparently no intention on the part of Fiat to apply the supercharger to stock cars, the firm has, as the result of its racing experience, fitted the supercharger to new 500 hp. aviation engines built for a French competition, and is also using it on marine engines. There is an attempt on the part of certain French engineers to induce the sporting authorities to forbid superchargers under piston displacement rules.

Fiat's Lightest Cars

The Fiats were the lightest cars in the race, scaling 1569 lb. with tanks empty. The Millers weighed 1615 lb., and the heaviest were the Voisins, weighing 1763 lb. The Fiats and Murphy and Alzaga's Millers were fitted with a new type Pirelli cord tire. The size in front was 29 by 4 and on the rear 31 by 5, the tread at the rear being perfectly flat. There appeared to be a considerable thickness of rubber on the tread, and practically none on the side walls, the whole construction, however, being much lighter than anything Pirelli has previously produced.

The three Fiats and the Miller changed the rears at half distance and in addition Bordino and Nazzaro changed a left front as a precaution. Although Salamano and Bordino each shed a tread, the new Pirelli cord gave excellent service. The Benz cars were equipped with Continental straight side tires. The French cars used Michelin clincher bead tires.



Containers being run from truck to loading platform

Electric Railway and Truck Transport Combined by Use of Container Cars

Detroit United Lines installs comprehensive system which will result in marked shipping economies. Door-to-door service is made possible. Shippers may use their own or street car company's motor vehicles. Rates to be adjusted on basis of careful study.

By D. M. McDonald

CONFIDENT that its plan of combining railway car and motor trucks for transportation of freight will result in important economies for shippers, Detroit United Lines is speeding up its plans for inauguration of this combination shipping service at all points on the 600 miles of lines over which it operates and throughout the contiguous territory which may be reached by motor truck.

For a considerable period the operation of the plan will be in a formative stage, during which the company will seek to demonstrate the efficiency of this method of shipping. At the same time that it is going through the educational period it will be collecting whatever remaining data are required through actual operation for the establishment of rates.

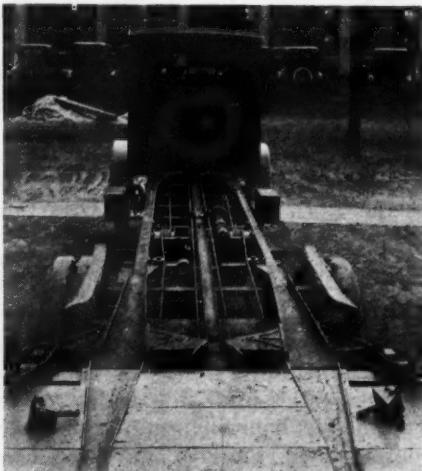
As has been indicated, the importance of the combined shipping service in effecting economies will devolve to a large extent upon the use of demountable containers which permit loading of the merchandise or produce by the initial shipper and its transportation to the point of unloading without any handling except that required to push the container from truck to railway car, then from car to truck again, and from the

truck to the point where the consignee requires it.

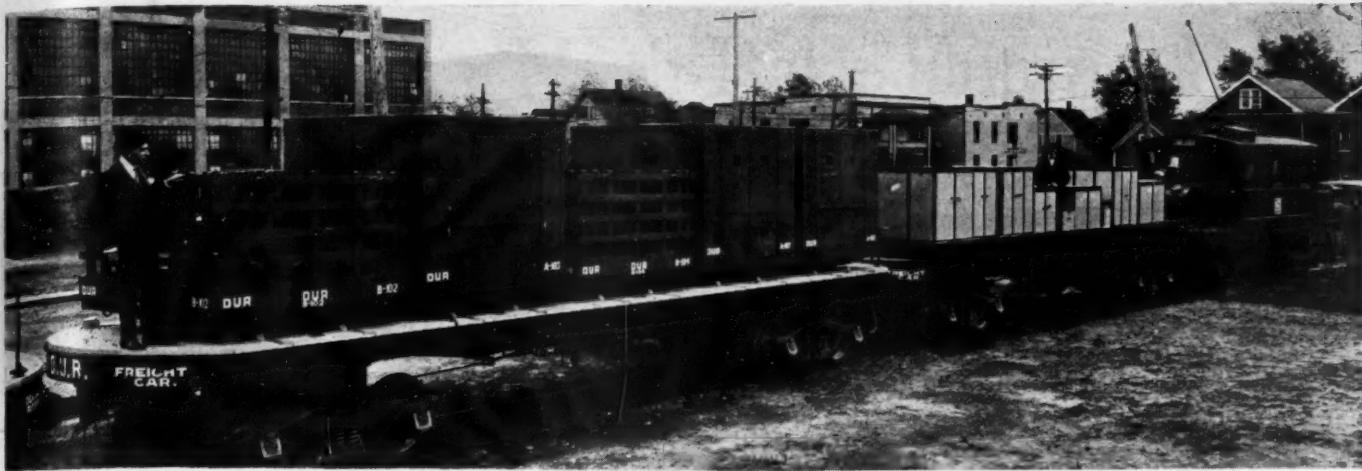
Throughout the entire distance that the shipment travels there will be no delay due to necessity for transloading, the only thing that is tied up at any time being the container, and that only at the destination. The shipment itself is not handled in any way at any point of its travel between the shipper and consignee. Thus, neither rail nor truck equipment is tied up for loading or unloading. The truck merely delivers the container at its final destination and picks it up some time later on a return trip after the consignee has unloaded it.

The container is a small-sized freight car and merely substitutes for the large car on less than carload shipments. By its use, shipments of almost any size are placed on a carload basis in that they alone occupy the container and it is handled as a unit. Different sized containers are being experimented with, but the company plans to standardize on certain sizes when those best adapted to all shipments are ascertained. All are on ball-bearing wheels, and even the largest, fully loaded, can be moved on a level surface by one man.

At the present time the company



Truck backed up to flat car, showing special tracks by means of which containers are transferred to cars. All containers are on ball bearing wheels and the largest types can be moved by one man.



Each flat car carries five containers. Various types of containers are used to meet different service requirements

has two types of railway cars to transport the containers. Its flat cars are equipped with a specially built platform which carries five of the large containers, each on an individual track, on which they are locked by mechanical couplings. Wedges are attached to the cars to block the container wheels. The smaller containers are shipped in railway box cars or flat cars with sides, and where the latter are used tarpaulins may be employed in inclement weather.

The containers are built both with panel and stake sides, depending upon the requirements of the shipment. The large ones are built to open on all sides, for greater loading and unloading convenience, and may be sealed. Only the large ones are coupled in place en route.

The company will keep a record of each of these in much the way that a railroad keeps a check on freight cars. Demurrage rates will be charged to insure their prompt unloading. As the plan becomes widely operative the company plans to have large numbers of these containers, regular shippers having constant supply and occasional shippers arranging for them as required.

Platforms Provided

Large platforms will be built at all stations and smaller platforms will be scattered through the surrounding country at smaller towns and other vantage points. The shipper will haul his shipment to the nearest

of these. At points not touched by the railway lines the containers will be picked up by D. U. L. trucks and hauled to the nearest railway platform, there going aboard the rail car. They are hauled to the station nearest the destination and are moved to the consignee by truck.

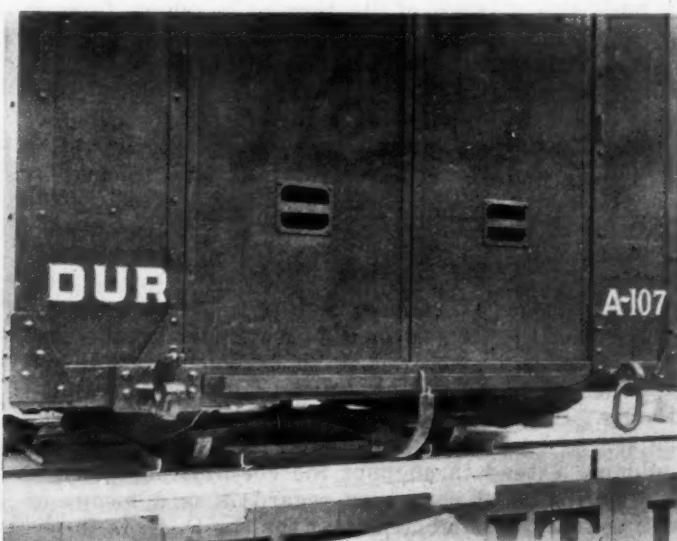
Trucks Pick Up and Deliver

Trucks will be used both for the pickup and delivery, therefore the market for trucks is not diminished by the application of the system. These trucks may be the property either of the railway company or of the shipper or consignee. Where company trucks are not used at either end there will be a straight carrier rate, with a charge for use of the container. Through door-to-door rates apply where the company performs all the service. Large shippers may make another saving by providing their own containers, merely using the rail service from terminal to terminal. Shippers who have been using the regular D. U. L. deliveries on carload shipments may continue to use them.

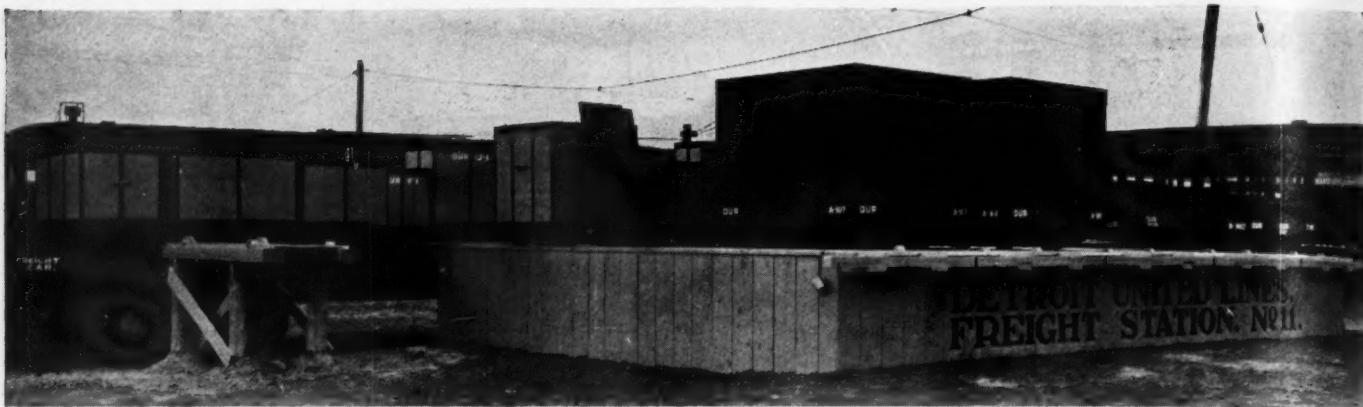
As outlined before, the trucks which the D. U. L. will use for pickup and delivery of the large carriers will be equipped with a special platform and cable attachment for drawing the containers into place and unloading them. This special equipment has been designed and is being built for the company by the Ideal Truck Equip-



A close-up view showing details of the mechanism used in loading and unloading



This view shows how the container runs in the specially constructed tracks, and pictures clearly the construction of one of these units



View of containers on one of the loading platforms which the Detroit United Lines has constructed at strategic points throughout the territory served

ment Co. Regular stake side, light, speedy trucks will be used for delivery of the smaller containers. The company is now awaiting the equipping of a number of trucks with the special cable apparatus to get its plan into action on a starting scale. This will be increased steadily as the shipping plan becomes better known.

With a general adoption of the shipping plan, inter-city hauling by trucks will be unnecessary, it is pointed out, and by confining trucks to short hauls in cities with speedily unloaded cargoes, their efficiency will be greatly increased. This feature of the plan is expected to make the greatest appeal to shippers. Time lost by trucks in the long hauls between cities will be made unnecessary to effect door-to-door deliveries without loss of time at either or both ends.

The plan is expected to be especially effective in the sale and distribution of farm products. Farmers will not be required to come into market with their produce, but may make retail sale connections and leave the deliveries to the D. U. L. system. By using containers, produce will not be damaged or suffer losses by theft in transit. Middlemen can be eliminated under the plan where farmers are able to make sufficient retail connections to take their produce as fast as it requires shipping. More distant markets can be reached and probably better prices obtained.

As a further development of its plan in connection with the sale and distribution of farm produce, the company has under consideration the establishment of small market buildings at each of its terminals, which farmers may maintain and sell direct to the consumer. Under this plan, farmers could cooperate in establishing a selling force at these terminals, consign their goods direct to the terminal, and make direct sale to householders in cities. Furthermore, these markets could be established at various points in cities and reached by D. U. L. trucks, the number only being limited by the ability of farmers to organize them.

Truck Builders Favorable

Truck manufacturers have been in touch with the development of the system for the greater part of the time that the company has had it under consideration and regard it not only favorably but in many cases enthusiastically. Should it be worked out satisfactorily in the zone served by the D. U. L. they see no reason why it should not extend throughout the country. By making the truck more efficient they regard it as a means of creating truck demand. Success for the D. U. L. in the opinion of truck makers will mean the spread of the system not only to other railway lines but to railroads and will result in the general adoption of the truck in a

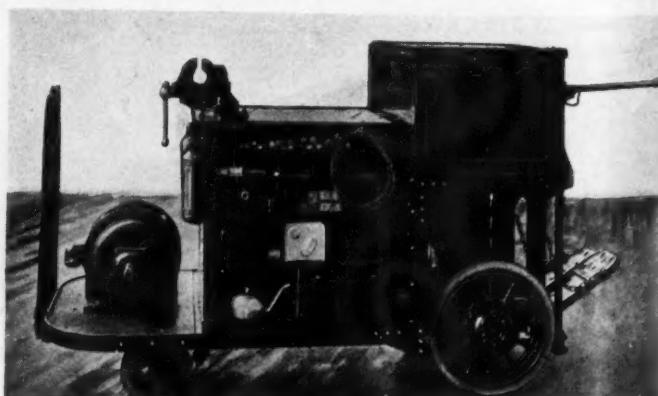
complete plan of transport for the nation's business.

The ultimate place for the truck is in conjunction with the railway and railroad lines, manufacturers agree, and they believe the movement initiated by the D. U. L. will emphasize the practicality of all large carriers going in for definite door-to-door shipping. Under the D. U. L. plan, it is pointed out, the truck will become the natural feeder for the railway freight lines, extending their service into districts too remote to warrant direct railway service. It is only a step to the adoption of motor lines for passenger service, and this development, it is expected, will follow fast on the heels of success in freight transportation.

Mechanical First-Aid Industrial Truck

A N industrial truck carrying equipment and tools needed for first aid in mechanical breakdowns has been brought out by the Elwell-Parker Electric Co. As may be seen from the illustration, a steel and wood case occupies about two-thirds of the platform, while the balance is reserved for an electric motor and a tool kit, with room for one or two repairmen to ride, the truck having a speed equal to three times that of a walk. A pipe vise is mounted on the rack, which is partitioned to accommodate the usual emergency equipment.

The truck is battery-driven and has relatively large, rubber-tired drive wheels. Since it steers on all four wheels, it is unusually maneuverable and can be driven right up to the job. The truck cannot be started unless the operator stands on the pedals, and if he steps off it will stop automatically within its own length. The equipment includes an electric horn.



Elwell-Parker industrial truck carrying first aid tools for use in repairing mechanical break-downs

Widman Uses High-Bake Enamel Panels in Production of Jewett Brougham

New type of construction permits durable and easily applied finish while still retaining conventional wood frame. Sections nailed in place and joints covered by special moldings which are held by through bolts. All metal said to be rust proofed.

By W. L. Carver

SEVERAL innovations are incorporated in the construction and manufacture of the new Jewett brougham body which is the product of J. C. Widman & Company. Although built on the usual wood structural frame, the metal work is all finished in black enamel which is baked on at high temperature. This combination is obtained by the progressive installation of completely formed and ready-enamaled metal sections upon a complete wood framework. Each section of the metal work is finished individually by the enameling process prior to delivery to its proper station in the assembly line. The wood frame is finished completely in the wood shop and primed for weather-proofing only before delivery to the assembly line, but is not subjected to the high temperatures of the enameling process at any stage of its progress.

Exterior appearance is finished off by a system of beading which is bolted into place at the junctions of the various panels. These bead strips are striped as required by a transfer process immediately after enameling. The top frame construction is such that the interior head lining is tacked in from above, leaving no exposed joints. The outer surface of the top is leather fabric, which is finished off smoothly by wire-on tape. As each panel or section is dipped during the enameling process, the metal work from sills to roof line is finished on both sides and is said to be proof against rust or corrosion.

Production of the component wood members is carried on in the mill room on an interchangeable manufacturing basis. Each part is produced in jigs or forms that insure absolute uniformity and interchangeability. These parts are then transferred to the frame assembly shop, where jigs and bucks are utilized to insure uniform dimensional characteristics. The top frames are produced as a separate assembly and fitted to the frames as a unit. The two door frames are also assembled with the same provisions for uniformity. All joints in the wood construction are mortised, screwed and glued. After the door and body frames are completed they are spray painted for protection against moisture and climatic changes.

Stamping Operation

In the metal-working plant the various panels and sectional members are stamped out of 20-gage bright steel, smooth surfaces being maintained as in fender practice. No hand bumping, welding or soldering is performed at any stage of the production of the metal work, as each part is formed to its finished shape. The metal portion of the body surface is divided into twenty-nine sections, each of which is formed to its finished state and perforated at the joint edges for the nails which are used in assembly. The following list includes all of the sections which comprise the complete metal work:

1 Cowl.

1 Dash, which is spot-welded in at the front end of the cowl.

2 Front uprights that form the windshield inclosure and finish off the forward door pillars.

2 Sill spacers which are interchangeable.

2 Rear side panels.

2 Wheel housings, which are spot-welded to the rear side panels.

1 Rear lower panel.

1 Rear and quarter upper panel.

8 Window frame sections.

2 Front corner bead strips.

2 Rear quarter belt bead strips.

1 Rear belt bead strip.

2 Rear quarter vertical bead strips.

2 Rear vertical bead strips.

2 Combined gutter and door opening finishing strips. The two doors are each assembled from the following:

1 Lower panel.

2 Vertical sections.

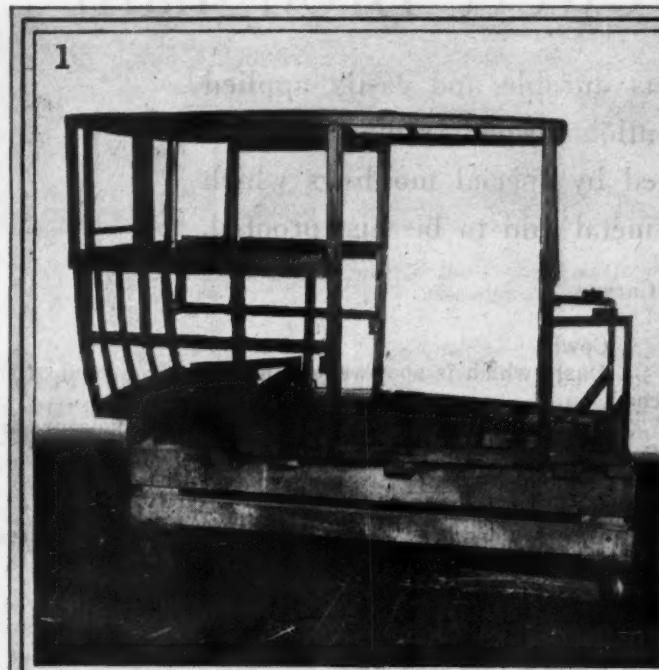
1 Header section.

Enameling and Cleaning

Following the forming operation, these parts are delivered to the enameling department, where they are first thoroughly cleaned and then passed through a high-temperature conveyor oven. This step is introduced in the process to insure the thorough oxidation of any grease which may have accumulated. Enameling is then done by a continuous process in the latest A-type conveyor oven. The layout resembles an inverted W, a V-shaped dipping tank being located at the first point, the first stage of the oven in the first inverted angle, the second coat dipping tank at the second point, the second oven stage at the next inverted angle and the unloading station at the third point. Motion is continuous through all stages of enameling and drying. Ventilating fans are used for circulation of the heated air and the inverted angular ovens conserve the heat supply. The rate of travel of the conveyor chain is such that parts remain in each oven for approximately fifty minutes at a temperature which is in excess of 450 deg. Fahr. A high-grade enamel is used and is made permanent and lustrous by the high-temperature baking.

As the parts are unloaded from the ovens they are placed in special felt-lined frames. Separate forms have been developed for each piece permitting concentrated loading with no danger of scratching or marring. Each frame accommodates but one type of piece and is equipped with felt-lined slots that locate the pieces with a minimum but positive clearance. Where the parts are relatively small, a felt-lagged lock board is placed over the frame to prevent

New Body Building Ideas Are Incorporated in the



1



2



3



4

Fig. 1—Wood framework of body as delivered to the assembly line. Fig. 2—Installation of pressed steel cowl which carries the dash, spot-welded in place. Fig. 3—Wood frame which clamps the rear lower side panel in place during attachment. Fig. 4—Hinged frame for attachment of rear and quarter panels

Advances in the Manufacture of the Jewett Brougham



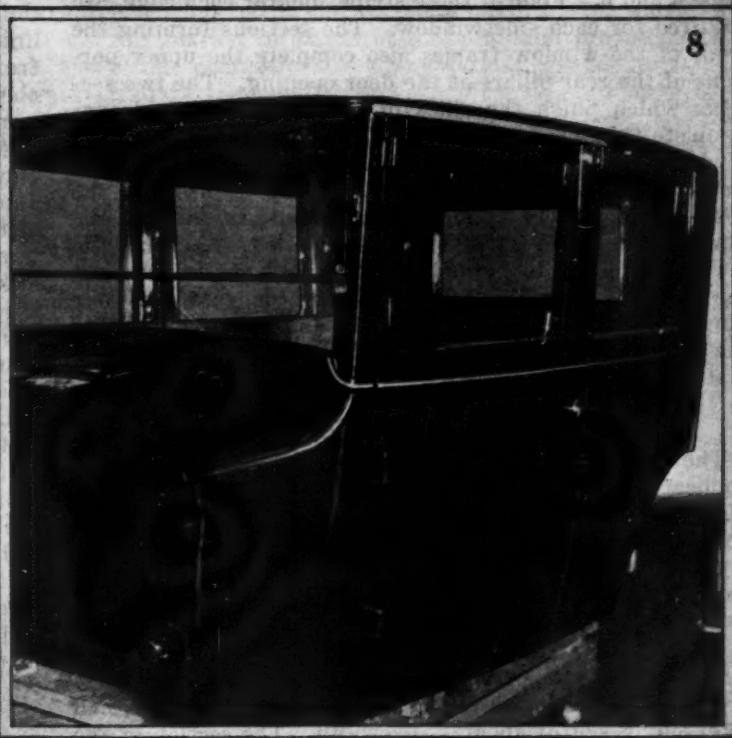
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6



7



8

Fig. 5—Installation of the lower section of the side window enclosure. Fig. 6—Installation of the rear section of the window enclosure. Fig. 7—Rear quarter vertical bead showing attachment bolts. Fig. 8—Complete body as delivered to shipping platform

the possibility of parts falling out during delivery or at the assembly line. An added manufacturing advantage follows the fact that beads can be striped by the transfer method immediately after the enameling process. Any desired color of stripe can be applied and then varnished over. The storage frame scheme protects this work until the actual work at the assembly line is undertaken. The varnish, by that time, has hardened so that the piece can be handled without detriment to the finish.

Conveyors Used for Assembly

Final assembly as well as upholstering are handled on three comparatively short conveyor lines which are located in one room. The body frame as illustrated in Fig. 1 is mounted on a carriage and placed at the head of the first line. The cowl section having the dash spot-welded in place, as shown by Fig. 2, is installed at the front end, while the rear side panels, which also carry the wheel housings spot-welded in place, are being attached at the rear end. These sections are fastened in place with Parkerized nails which are inserted in the perforations at the edges and driven into the wood body frame. The surface of these panels is formed to fit around the door pillars, thus finishing off the lower portion of the door opening.

These sections are followed by the rear lower panel and the rear and quarter upper panel. Forms as illustrated by Figs. 3 and 4 are clamped over the outer surfaces of the panels during the nailing operation to insure the proper fit and location with respect to the wood frame and the finished panel assembly. These forms are also shaped to protect the panels from any misdirected hammer blows. A clearance of about $\frac{1}{4}$ in. is allowed between the adjacent edges of the various panels. This detail forms an important part of the construction in doing away with the usual soldered bead, and will be referred to in the discussion of the bead installation.

Following the installation of the major panels, the windshield frame and the door and window openings are finished by the means of sectional strips, as indicated in Figs. 5 and 6. Four of these strips, one for each edge, are required for each side window. The sections forming the front of the window frames also complete the upper portions of the rear pillars at the door opening. The two sections which finish the sides of the windshield inclosure complete the upper portion of the front door pillars. The cowl section extends up and forms the bottom of the windshield inclosure. A similar arrangement is used on the door. Two vertical sections and a header section finish the top and the two sides of the window enclosure, while the lower door panel is carried up and bent over to complete the bottom. Both doors are assembled, complete with four hinges each, at a separate place, and are delivered to the line as complete units with the locks and crank operated screw and nut type of window regulators in place.

Bead Strips Applied

The body up to the top line is then rounded out by the application of the bead strips. To overcome the obvious disadvantages of the combination of the finished panels and the older type of solder-finished beading with its attendant acid and heat, a new type of bolted-on beading has been developed. Steel strip stock of 20-gage is first rolled so that the conventional semi-elliptic visible portion is extended and folded back at each edge to form flanges which later rest flush on the body panels. As these flanges are folded toward each other they are trimmed to leave an intervening slot of about $\frac{1}{4}$ -in. width. The section of the bead will then accommodate and fully conceal the head of a 3/16-in. diameter flat head carriage bolt, the square-shouldered shank of which projects out through the slot. As the square-shouldered shank fits the slot closely, rota-

tion of the bolt during assembly is prevented. Patents covering the bead design and arrangement in conjunction with the details of the panel construction are now pending.

Bead strips are then cut to length and formed to fit the contour of the body at the point for which the particular section is intended. At the same time the visible ends of the strips are beveled off for appearance, and openings for the introduction of the bolt heads are stamped out of the flanges. These openings are placed away from the position of the bolt head during assembly. The heads of the proper number and length of bolts are inserted in the opening and then slid along to the desired position where the flanges are of full width. The bolts are secured at the inside of the frames by nuts, plain and lock washers which are concealed in counterbored holes and covered by the trimming.

Two formed strips of this kind are bolted at the front corners, each extending around the radius of the front pillar from the belt line at the side to the lower corner of the windshield inclosure. The belt bead across the front door is stamped in the large lower door panel. The rear quarter belt beads extend from the backs of the doors across the sides and around the rear corners to the junction of the rear panel and the side panels. The rear belt bead fills out the space across the back. Although the entire belt bead was originally made in one piece, the division into three sections has brought about better appearance and much easier handling. The rear vertical beads cover the junctions between the joints of the rear and lower side panels. A small steel stamping is drawn over the joints in the beads at the back of body. These strips with two more at the junctions of the rear upper panel and the two rear window frame sections which are installed as in Fig. 7 completely cover every joint in the metal surface.

Upholstery and Head Lining

While the metal work of the body is assembled, the doors are hung, windows and the usual felt guides installed and the cowl ventilator is bolted in. The upholstery and head lining follow. A ledge around the inner edge of the top frame permits tacking of the side and top lining from above before the fabric top is stretched over the framework.

As the front seats are of hinged bucket construction, only the rear seat is built into the body. The seat back is assembled on a frame which is carried by metal hooks at the top and screwed to the rear sill at the bottom. The interior equipment is completed by window straps and locks, instrument board and scuff plates at the bottom of the door opening. The angle of door opening is maintained by a chain type check, which is anchored to the belt framework of the body. The doors are fitted with the usual rubber bumpers and dovetail guides.

Leather fabric is stretched over canvas and blue felt padding to form the top. The corners of the top are moistened during the tacking process to eliminate wrinkling. After the top is tacked and trimmed, the combination gutter strip is nailed in at the door openings and wire roll leather fabric beading is tacked on to finish the remainder of the top corner. After the windshield metal visor and seats are installed and a general clean-up, the body as illustrated by Fig. 8 is delivered to the shipping platform.

First of Type

Although the Jewett brougham is the first of this type, the scheme of construction is readily adaptable to any closed-body model. In fact, a complete line of closed bodies can be built around a small number of standardized panels and sections.

Automotive Industries
October 4, 1923

Capacity for Tire Production Exceeds Immediate Demand

Merchandising troubles result directly from oversupply.

Stabilization may be possible on a basis of estimates of minimum demand.

By Norman G. Shidle

MOST of the troubles of the tire industry can be traced back to an excess of production capacity. So long as more tires can be built than the market will absorb within a given time, competition will continue to be keen enough to result in price-cutting, special offers, conflicting distribution channels and the multitude of otherills that seem bound to follow.

Nobody recognizes the difficulties of the present situation better than the executives of the various tire companies. Many of them have been forced by immediate needs into measures of which they do not particularly approve as permanent policies. When a company has a plant capable of building 10,000 tires a week it must eventually build and sell nearly 10,000 tires a week, reduce the capacity, or go out of business.

Naturally, it will do everything in its power to achieve the first of these three alternatives before reverting to either of the two others. It will sacrifice temporary profits and use distribution channels which it recognizes to be useful for a short time to weather temporary storms.

And who can blame this company? Its executives may agree that there is too much production capacity for the industry as a whole, but naturally they believe that their company will be one of the survivors. Otherwise they wouldn't have their money in the business. And the executives of every other organization feel practically the same way.

Dealer Troubles

In the meantime, it becomes more difficult for the tire dealer to earn a living. What is the answer?

A study of the developments which resulted in the present situation may cast some light on the question. The excess capacity which exists may be attributed chiefly to two causes:

1. An apparent belief on the part of tire manufacturers in 1919 and 1920 that the rate of growth of their business could never slow down. This resulted in expansion of manufacturing facilities on a scale all out of proportion to what was needed as shown by developments which followed in 1921 and 1922.

2. A tremendous increase in the wearing qualities of tires in general. Statisticians of the industry, figuring on future demand, apparently failed to consider this fact fully enough in making estimates.

The first of these factors is water already passed under the bridge. Everybody in the tire industry knows that building went forward too rapidly in 1920; they knew it a long while ago. Time has already improved conditions, as none of the important companies have increased their plant capacity to any marked degree in the last two or three years. Demand is being given a fair chance to catch up with supply.

The increased mileage being obtained from tires, however, must be considered carefully in estimating future needs. There was a time, less than ten years ago, when it was assumed that every motor vehicle in operation used about 5 or 6 tires a year. Gradually that figure was decreased, estimates last year having been made quite generally on a basis of 2.5 tires per car per year for replacement purposes.

Replacement Market

There is good reason to believe that tire replacements now average not more than 2 per cent per year, possibly a little less. This is borne out by the fact that in 1921 for replacement purposes there were produced 2.13 tires per car registered and in 1922, 2.4. There was some over-production in both of these years.

If it were possible to determine exactly how many tires will be sold in 1924, a big step would have been taken toward stabilization of the industry. While it is obviously impossible to propound any such exact figure, it is worth while to try to get an estimate of minimum demand. Then purchases and plans can be made on this minimum basis and any market in excess of the minimum can be met by short time commitments. Many serious complications are involved in the making of such estimate, but any carefully developed prediction is a better basis for procedure than a hopeful guess. Among the chief obstacles to accurate estimating are the following:

1. It is difficult to estimate the number of tires per year needed by each vehicle in operation, because this average depends on the average mileage of the vehicles as well as on the wearing qualities of the tires. Neither of these factors can be determined with any high degree of accuracy.
2. Even after a minimum requirement for the tire industry has been determined, each individual company is faced with the difficult task of finding out what share of that total it can reasonably expect to procure. The percentage of total business previously secured gives some basis for estimate, but will not be considered satisfactory in many instances.
3. Original equipment demands fluctuate. These can be determined more accurately than either of the other factors, however, as considerable data are available concerning the trend of car and truck production.

Bearing in mind these variables, we may proceed to an intelligent although very general consideration of what tire demand is likely to be in the future. An average of two tires per car per year will be assumed in making replacement estimates. A registration of approximately 14,000,000 may be assumed for 1924. On this basis it appears that about 28,000,000 tires will be needed for replacement purposes next year. Original equipment will

require not less than 8,000,000 tires ($4 \times$ an estimated minimum production of 2,000,000).

Minimum Demand Estimated

Adding these two figures together, a minimum demand of 36,000,000 appears to be assured for 1924. This figure may be increased, and probably will be, by an added demand for original equipment, which in turn would be reflected in a slightly increased replacement market. The effect on replacement sales of higher 1924 production, however, would not be fully felt until 1925.

It may be interesting to carry this line of reasoning back to the present year to see how it checks up with actual conditions on which we already have certain data. The 1923 requirements would look like this:

Replacement needs	24,800,000 (2 x 12,400,000)
Original equipment needs....	15,200,000 (4 x 3,800,000)
Total	40,000,000

About 30,000,000 tires were built in the first seven months of 1923, an average of about 2,500,000 a month.

On the basis of these figures, it appears that about 10,000,000 tires will be needed between Aug. 1 and Jan. 1, an average of 2,000,000 a month. This indicates that production has been running ahead of demand to some extent.

The story told by the figures is corroborated by the production trend, as there was a decided drop in the number of tires put out in June and an even more marked decline in July. The flurry of price cuts which began about the middle of September give further economic evidence of temporary overproduction.

Conservative Predictions

Thus it appears that if tire production as a whole could have been organized on the basis of a conservative prediction made at the beginning of the year, the present condition of overproduction might have been avoided.

A keen necessity is evident for some active attempt to hold production within reasonable limits, so that constantly recurring periods of oversupply will not occur and bring with them their inevitable train of merchandising evils. The method of estimating demand outlined above is, obviously, crude and quite general in character. It is presented, however, with the thought that it may lead to the development of more accurate and detailed ideas along similar lines.

The need for a closer relation between supply and demand in the tire industry is strikingly illustrated by a survey of the difficulties which almost always arise when the balance between these two factors is destroyed.

Among the chief troubles that can be traced to this source is the sale of tires for original equipment at a loss or at a negligible profit. The reasons for this practice, as given by the president of one tire company which does considerable original equipment business, are as follows:

1. The buyer of an automobile is very likely to continue to use the make of tire with which his car is originally equipped, provided he gets good service. He is likely to buy a spare of that make when he purchases the car.

Thus, the tire manufacturer gets a certain advertising value from having his product used on new cars, the expectation being that spare and replacement profits will more than make up for the slight loss involved in the tires sold for original equipment.

2. Low tire prices make possible low car prices. Low car prices make possible greater car sales, thus creating a large replacement market for tires.

3. The larger tire replacement market in turn tends to stabilize tire production schedules, making it possible to

operate continuously near to capacity, with consequent reduction in overhead costs.

These statements present quite fully the positive side of the case. They tell why an apparent unsound business practice has been carried on for many years.

The advertising value obtained from original tire equipment, however, undoubtedly has diminished greatly in the last decade. Comparatively few makes of tires existed in the old days and great variations in quality and service were common. Belief in original equipment as a means of advertising has hung on despite the fact that its power grows less each year. In this respect, it resembles the belief in spring dating and the mileage guarantee, both of which had many followers long after they had outlived their usefulness.

Value of Original Equipment

Hundreds of different brands of tires are on the market today and the car owner is assailed on every side with advertising describing the merits of each make. The fact that the car manufacturer has picked out a certain tire doesn't mean so much to the owner as it once did. He himself knows more about tires than he used to.

Dealer influence has grown to a marked extent, moreover, so that the owner is very likely to buy a tire recommended to him by the retailer. If a Sennett car dealer is handling Runwell tires, with a fair discount and reasonable territorial protection, Sennett owners in this territory are very likely to be sold Runwell tires for spares or replacements, regardless of the fact that the Sennett is originally equipped with Hyphen tires or some other brand.

Dealer influence is becoming constantly stronger, and the advertising value of original equipment is decreasing accordingly. Some tire companies already have concentrated most of their recent selling efforts on the dealer. They have discontinued selling tires to car manufacturers, except where they can make a profit—which is nowhere at present—and have begun to cultivate the retail field extensively. These companies feel that they can get maximum results by applying to dealer advertising and dealer helps the money previously lost on original equipment sales.

Stabilizing Production

Sales to car manufacturers do help to stabilize production, even if made at a loss. This important fact cannot be disputed. The 3,800,000 cars that will probably be built this year will require something like 15,200,000 tires. This is about 38 per cent of the total tire needs. So long as tire building capacity is somewhat larger than the immediate demand for tires, certain tire companies may find it profitable to sell original equipment at a loss in order to keep their factories running and their overhead down.

While competition remains keen enough to make below-cost sales necessary, however, it is reasonable to believe that tire production capacity is greater than is warranted by the economic demand.

Change in this situation will come about through the normal increase in tire demand and the retarding of factory capacity growth. Demand is going up steadily at the present time, while extension of tire building facilities has been practically at a standstill since 1920. Until these two trends have operated for a sufficient length of time, competition probably will make necessary below-cost sales to car manufacturers.

There are many favorable signs to be noted at the present time, however, and prospects for the future are essentially good.

Navy-Wright Racing Plane Is Built Around 700-hp. Engine

Plywood construction used in fuselage and wings. Latter contain radiator units which are arranged for ready removal if damaged. 12-cylinder powerplant said to develop 132 lb. per sq. in. b.m.e.p. and weigh 1.77 lb. per hp. Intake system has carburetors in V.

PRIMARILY intended for racing, the Navy-Wright racer, known as model F2W, is so designed that with minor changes it can be adapted to a single seater fighter or pursuit ship of very high performance. This is of particular significance in view of the fact that racing machines have their best performance at approximately ground level, whereas the fighter must show its superiority over that of the racer at elevations ranging between 15,000 and 25,000 ft.

This Navy biplane, equipped with a "boosted" Wright T3 engine, at first glance gives the impression that the engine was first placed in position and the airplane built around it, so massive does the 700-hp. engine appear when compared with the wing area necessary to sustain the machine in flight. As will be seen from the accompanying photographs the machine is "cleaned up" and streamlined to the highest degree.

The power plant used in the machine is the new Wright T-3 high compression model, especially tuned for racing, the compression ratio having been increased from $5\frac{1}{2}$ to $6\frac{1}{2}$ for this purpose. The basic design of the standard T-3 is the same as that of the model T-2 described in AUTOMOTIVE INDUSTRIES July 13, 1922. The new model, however, incorporates a number of important alterations which have resulted in increasing its output by approximately 50 hp. Although the crankshaft and other units have been enlarged and stiffened, the weight is actually less than that of the T-2. The increased power may be attributed to the following changes in design:

1. Larger valve diameter.
2. Increased valve lift.
3. Enlarged intake manifold passages.
4. Redesigned and relocated carburetors.

Structurally, the machine follows conventional American racing practice. The fuselage is of the monocoque type,

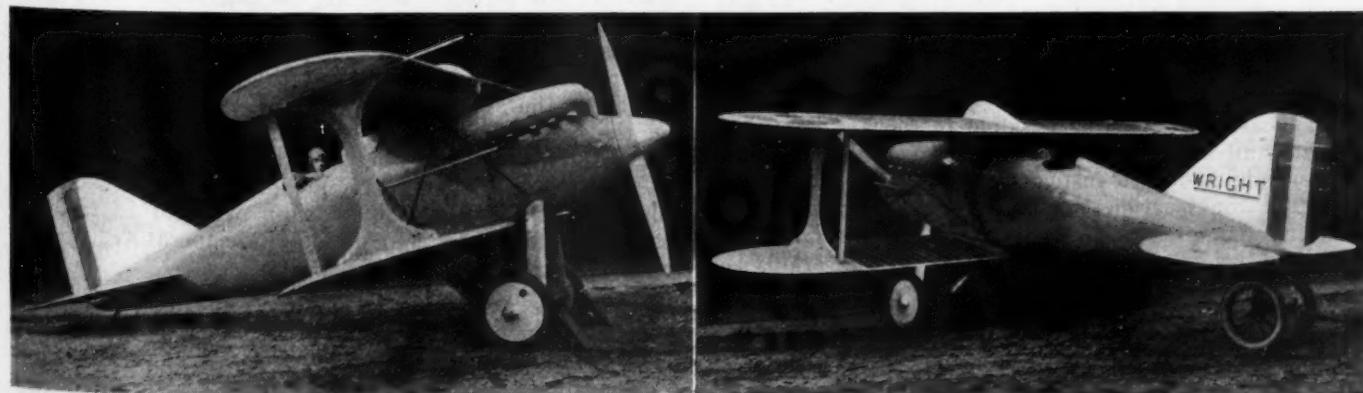
having a two-ply spruce shell, with plywood bulkheads sufficiently close to insure the shell maintaining its shape under the most severe conditions. The main wings, set at a negative angle of incidence, consist of two lower panels and a single upper panel. These are built up of spruce spars and covered with two-ply veneer. Two inter-plane struts of "I" form, constructed of spruce, are employed, while the center strut is a single vertical framework consisting of four welded steel tubes covered with fabric and extending from the leading edge to the front of the cockpit.

To minimize drag set up by fittings attached to the exposed surfaces, the ends of the stream line bracing wires pass through the wings and fuselage, and are secured to fittings inside which are readily accessible for adjustment. The tail plane, which has its angle of incidence adjustable on the ground, is constructed in the same manner as the vertical fin, being framed with spruce ribs and covered with mahogany ply. The elevators and rudder have steel frames with fabric coverings.

V-Type Landing Gear

The V-type landing gear is of tubular steel with wood fairing of the hinge type. The two steel spreader tubes upon which the hinged axles are mounted are so faired as to act as a lifting surface. The wheels are sprung in the usual manner by elastic cord shock absorbers.

Wing radiators of the type now practically standardized on high speed machines are used, the cooling surfaces extending along the upper panel almost to the inter-plane strut and also on each side of the lower panel. The construction of the entire radiator is such that it is a comparatively simple operation to remove a damaged section from the system for replacement without disturbing the wing or other units of the cooling surface. A header in

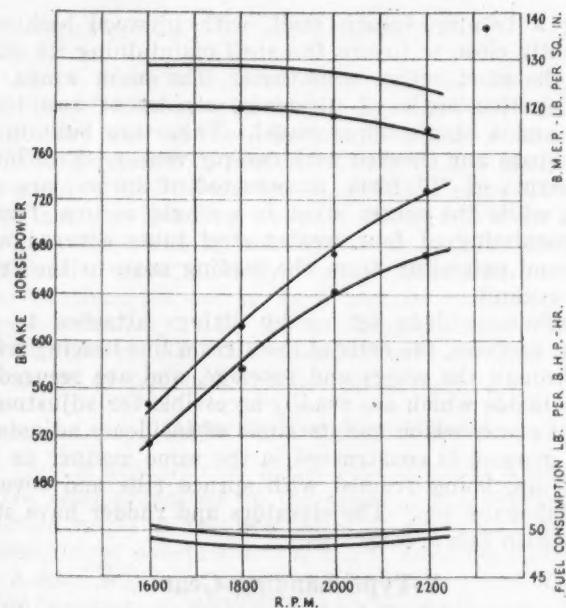


Two views of Navy-Wright airplane, which is built around the latest edition of Wright 12-cylinder engine

the trailing edge of the wings collects the cold water from the cooling system and from here it flows to the surge tank in the center of the upper wing panel. Any air which may have been present in the water here has a chance to escape. The engine water pump draws directly from the surge tank.

The model T-3 Wright engine has a bore and stroke of $5\frac{3}{4}$ and $6\frac{1}{4}$ in. respectively, and a piston displacement of 1947 cu. in. At 2000 r.p.m. the engine delivers 650 b.h.p., which is equivalent to 132 lb. per sq. in. b.m.e.p., giving 1 hp. for each 1.77 lb. weight. In operation the engine is particularly smooth and it is said to be free from all torsional vibration within the speed range, which reaches 2300 r.p.m.

Cylinders are cast in blocks of three and the valve operating mechanism carried in a single cam box over each bank of six cylinders. The combustion chamber is of aluminum with four valves per cylinder seating in



B.h.p., b.m.e.p. and fuel consumption-speed curves of model T-3 Wright 12-cylinder engine, high and low compression

aluminum bronze rings, the piston travelling in a thin inserted open end steel sleeve. One of the marked changes is the increased diameter of the crankshaft which has been changed from 3 to $3\frac{1}{4}$ in. and the center main bearing reduced $\frac{3}{4}$ in. in length. The crankshaft is supported as before by bearing caps held in the upper crankcase. Instead of through bolts, there are long studs to secure the bearing caps. All of the caps are forged aluminum alloy. The reduction in the length of the main bearing was made possible by changing from underneath to overhead carburetors, since the length of this bearing was determined by the space required for the intake pipes through the crankcase.

Revised design has eliminated all hidden passages in the crankcase so that it is possible to see and scrape, if necessary, all surfaces on the inside of the case. Four breathers are now used instead of two.

Cylinder construction has been changed to the extent of adding flanges to the steel cylinder barrels, for the purpose of holding the cylinder blocks to the crankcase, thus doing away with aluminum flanges. Owing to the use of steel flanges and the consequent reduction of the hold down stud circle diameter, it is possible to shorten the connecting rods $\frac{1}{4}$ in., thus lowering the cylinder block and making the engine narrower. Aside from change in length the connecting rods are the same as previously used,

except that the wrist pins are $\frac{1}{8}$ in. larger in diameter, now being $1\frac{3}{8}$ in. Connecting rod bearings are made of a copper-tin-lead alloy without babbitt, and run directly on the crank pins, which have the same 3 in. diameter. The exhaust ports have been changed from individual to siamese. The clear diameter of the valves have been increased $\frac{1}{4}$ in. so that they now measure $1\frac{1}{8}$ in. in the clear. Valve lift has also been increased.

The intake system has been completely revised, there being two double carburetors mounted in the V of the engine, each side of each carburetor supplying three cylinders. Formerly two large single carburetors were mounted on the underside of the lower crankcase. The carburetors are Stromberg, model NA-U6T. The float chamber in this design is located between the two choke tubes, so that regardless of whether the airplane is climbing or diving, the fuel is not spilled from the jets. In addition to this feature, the carburetors have a very flat fuel-consumption-propeller-load curve.

Convenient idle adjustments which can be operated by the thumb and forefinger have been provided. Metering jets are accessible for replacement with the carburetors in place in the V of the engine. The whole carburetor assembly, together with its air horn, piping and control rods, can be removed as a single unit. This is shown in one of the accompanying photographs. Intake manifolds in the cam boxes, as well as in the cylinders, have been increased in size and refined as to curvatures. It is interesting to note that the details of the carburetor installation have been so worked out that they do not interfere with accessibility of the spark plugs in the V of the engine.

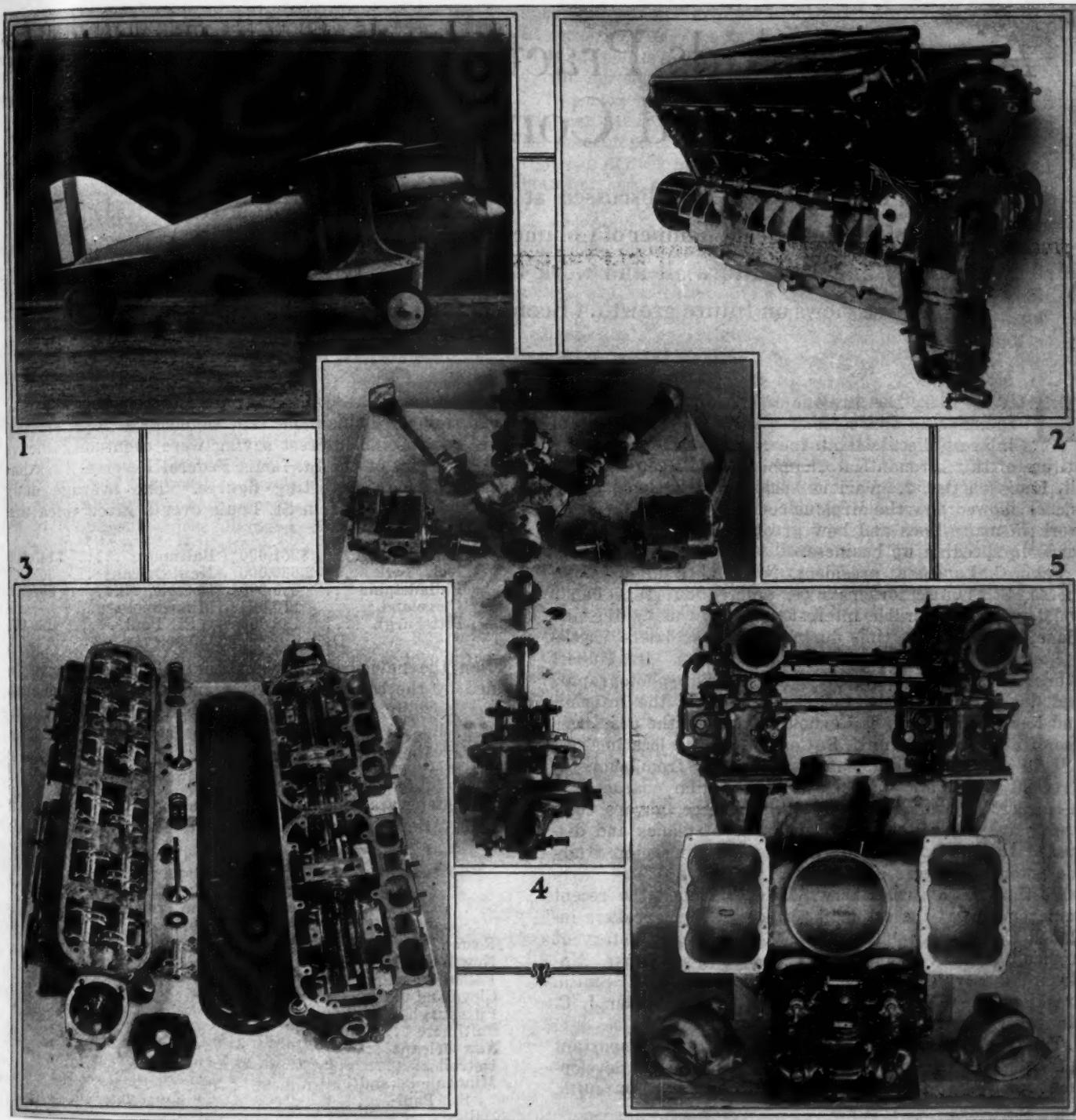
Lubricating System Redesigned

The lubricating system has been considerably revamped. Oil is now distributed from the pressure pump to the main bearings by means of an oil manifold bolted to the underside of each main bearing cap, and thence to the crankpins and rods. Heretofore, oil was supplied to the main bearings through a cast-in manifold with branches to each main bearing. This was not found satisfactory, owing to the difficulty of obtaining a perfectly tight system. In this connection, it should be borne in mind that these engines operate with an oil pressure of from 75 to 100 lb. per sq. in.

Lubrication of the camshafts has been altered, so that the oil is now fed into the hollow shafts and distributed from a hole in the leading side of each cam, to the rollers and rocker mechanism. Oil is still carried under pressure in the rocker arm supporting tubes, thus oiling the rocker arm pivots. A great deal of care is shown in the detail lubrication of the gear train. Oil is fed from the hollow camshafts to the camshaft bevel gear drives, thence down the vertical shaft tubes to the lower gearing and ultimately back to the lower crankcase. Oil from the hollow crankshaft is fed through holes in the crankshaft bevel gear, which drives the camshafts, magnetos and oil and water pumps, as it was found that relying upon lubrication from oil dropping on the periphery of gears was not sufficient.

Oil for the synchronizer and fuel pump gears is taken off the rear main bearing by means of a copper tube and carried to the top of the synchronizer housing, so that the entire gear train is fed by oil under pressure. Oil thermometer connections are now provided to facilitate obtaining both inlet and outlet oil temperature. Larger oil and water pumps are used.

A universal joint is mounted on each inclined drive shaft operating the cam mechanism. This joint is in the form of internal and external gears mounted on the vertical shaft below the upper bevel gear. This compensates for slight misalignments of the camshaft drive shafts, which are not on the center line of the cylinder blocks.



Navy-Wright racer and 12-cylinder $5\frac{3}{4} \times 6\frac{1}{4}$ in. engine used in it, showing details of distribution gearing, new synchronizer drive, magneto couplings, etc., valves and valve operating mechanism and carburetor assembly

The timing clutch on each inclined shaft, provided for making the camshaft adjustment, is retained. Several changes have been made in the camshaft drive, principally in removing the synchronizer drives from the inclined shaft tubes and making a separate assembly mounted between the two vertical shafts as shown by the photographs.

An entirely new type of magneto coupling has been devised. A single Thermoid disk, instead of the two pairs of internal and external gears previously used, are employed to give flexibility and care for misalignment. Adjustment is secured by a small worm and wheel, making it possible to rotate the magneto armature relative to its drive, by means of a screw driver.

The water intake system has been improved so that the water is now taken in at two points at the bottom of each

cylinder block, and issues at two points at the top of each cylinder block.

The propeller hub has been made very much lighter than the previous model, and for this reason has been made of nickel steel. The splined type of connection with the crankshaft has been retained. The propeller itself is of forged duralumin and has three blades which are fastened to the steel hub in such a way that the pitch of the blades can be readily altered to predetermine settings for securing maximum efficiency.

Some of the important dimensions of the plane follow: Overall length, 2 ft. 4 in.; span, 22 ft. 6 in.; overall height, 7 ft. $11\frac{1}{2}$ in.; gap, 4 ft. 4 in.; angle of incidence, 0 deg.; stagger, 0 in.; dihedral or sweepback, 0 deg., and weight, 2900 lb.

Airplane Aids Practical Development in Civil and Commercial Fields

Peace time uses are discussed at Second National Air Institute of Aeronautical Chamber of Commerce. Banking, shipping, forestry and agriculture all find work for aircraft. Industrial leaders give views on future growth. Economic importance is recognized.

HOW to make the airplane of greater practical value to industry and commerce was the chief topic of interest discussed at the second national air institute of the Aeronautical Chamber of Commerce held in St. Louis on Oct. 2. Various speakers of national prominence showed how the airplane could be used to facilitate work in many lines and how great a factor it might be made in speeding up business.

John C. Lonsdale, president, National Bank of Commerce, St. Louis, for instance, pointed out that banks could gain considerable interest money by using the airplane to shorten the time during which customers' checks are outstanding between banks for collection. Dr. Hubert Work told how airplanes are being used in photographic and fire patrol work by the Department of the Interior, and Rear Admiral W. E. Reynolds described the peacetime use of airplanes by the U. S. Coast Guard in locating vessels in distress at sea, carrying lifelines from shore to wrecked vessels and in other work of similar character.

Herbert Hoover, Secretary of Commerce, gave a comprehensive talk on the peacetime uses of planes and discussed the various possibilities for utilizing more fully the potential powers of aircraft.

Postmaster-General Harry S. New outlined the recent achievements of the air mail service. Other speakers included Col. Paul Henderson, H. C. Wallace, Secretary of Agriculture; Dr. Joseph Ames, executive chairman, National Advisory Committee for Aeronautics; A. H. Smith, president, New York Central Railroad; Commander J. C. Hunsaker and Rear Admiral W. A. Moffett, U. S. N.

The following excerpts from some of the most important speeches show clearly the possibilities of future development for use of aircraft in civil and commercial pursuits.

Airplanes Can Speed Up Banking, Lonsdale Says

John C. Lonsdale, president, National Bank of Commerce, said in part:

In speeding up the actual transaction of exchange you correspondingly decrease the amount of money on deposit where the volume of trade is equal. Seemingly, then, the speed-up would work to the advantage of the section or community with the greatest trade volume. A review, however, of the gold settlement fund—the basis upon which the Federal Reserve equalizes trade balance—shows that the advantage of trade is pretty equally distributed over the United States. From a dollar and cents standpoint, then, this reason for greater dispatch is minimized.

Just to show the volume of business that would be involved from St. Louis alone that would be at least speeded up, if not specific interest saving were eventually shown, C. C. Attebery of the St. Louis Federal Reserve Bank has gathered some interesting figures. The average daily amount forwarded from St. Louis over a given week was as follows:

Boston	\$261,000	Baltimore	\$145,000
New York	2,630,000	New Orleans ..	367,000
Philadelphia ..	305,000	Detroit	304,000
Cleveland	170,000	Minneapolis and	
Pittsburgh	188,000	St. Paul.....	130,000
Dallas.....	\$350,000		

Even the novice could visualize the advantages to be gained by the community first transporting its exchange checks aerially, and yet its immediate adoption, once started, by all large centers would soon overcome this temporary benefit.

Transport Time

Mr. Attebery also compiled a table showing comparative transportation time on the amounts quoted in above table:

	Time Required for Clear- ance by Rail Trans- portation	Time Required By Air- plane Trans- portation	Saving by Air Line
Boston	Three days	Two days	One day
New York	Two days	One day	One day
Philadelphia ...	" "	" "	" "
Cleveland	" "	" "	" "
Pittsburgh	" "	" "	" "
Baltimore	" "	" "	" "
New Orleans....	" "	" "	" "
Detroit	" "	" "	" "
Minneapolis and St. Paul	" "	" "	" "
Dallas	" "	" "	" "

As an indication of the freightage involved and the fact that in volume the loss to the rail carriers would be negligible, the amounts named in the first table would weigh as follows:

Boston	2 lb. 10 oz.	Baltimore	2 lb.
New York	13 lb.	New Orleans ..	6 lb. 9 oz.
Philadelphia ..	3 lb. 8 oz.	Detroit	1 lb. 5 oz.
Cleveland	3 lb. 7 oz.	Minneapolis	
Pittsburgh	2 lb. 13 oz.	and St. Paul.	5 lb.
		Dallas	9 lb.

On a basis of 6 per cent on the volume shown above, airplane transportation in saving on the average of one day to all points named would mean an economy of nearly \$800 a day in interest. A saving, however, that would not be fully realized on when all points began using planes.

Now as to the charges to be made under which aerial service with this volume of business can be profitably

done, and whether the rate for carrying would be great enough to outweigh the advantages gained is undeterminable with data at hand. However, one firm of aviation engineers, I understand, is making a survey of the volume and believes the establishment of such a service is feasible upon a reasonable cost basis.

Aircraft Gives Much Aid to Interior Department

Airplanes are destined to perform invaluable service for the diversified activities of the Department of the Interior, according to Dr. Hubert Work, Secretary of the Interior. Dr. Work said in part:

In rushing mine rescue apparatus to the scene of disaster, in mapping from the air the immense reservoirs and extensive canal systems of reclamation projects, in photographing inaccessible areas to complete topographical features of the land for the Geological Survey, and in the transportation of passengers to the national parks, these are some of the possible developments of the future.

The airplane already had been used by our Bureau of Mines in its rescue work following mine accidents. At the Argonaut disaster in California army airplanes were used to carry fresh supplies of oxygen and medical supplies from San Francisco to the mine.

Gerrard H. Matthes, for many years one of the hydrographers of the United States Geological Survey, and later with the Bureau of Reclamation, has been developing map making for reservoir sites, drainage basins and other purposes by aerial methods.

Another field of usefulness for the airplane might be in the line of photographing tracts of land for advertising purposes. This would permit a comprehensive presentation of a large tract of land which frequently would form an attractive advertisement. The Bureau of Reclamation, for example, has in its files a number of airplane photographs of cultivated farm units on the Orland project, California, showing the various fields and orchards quite distinctly. These photographs would lend themselves to attractive advertising.

Such photographs might find a ready use in showing the progress of construction of canals and laterals to cover new land, extension of drainage ditches and similar work.

In the National Park Service I can foresee the use of the airplane in carrying passengers in some of the parks, which might be extended into freight deliveries. Their use in fire patrol work in the parks readily appeals to our sense of the practical, and I do not believe that their regular use in this connection is far distant.

Army Work Aims Toward Industrial Preparedness

Major General Mason M. Patrick, Chief U. S. Army Air Service, said in part:

At the present time the United States has a considerable number of Liberty engines and some others on hand, but no additional Liberty engines have been built since the close of the war. Since 1918 we have been largely dependent on war produced aircraft and the orders for new planes placed with the manufacturers have been very few. As the Government is at present almost the only user of aircraft, the market for commercial planes not having

developed as yet, the aircraft industry in this country has shrunk to almost negligible proportions. This condition has progressively grown worse until today it is a matter of great concern, for it threatens the healthy development of the aeronautical art.

The economic importance of a form of transportation that can cause the country to shrink to less than one-third its present size, from the point of view of accessibility; that can deliver mails from coast to coast in twenty-eight hours or less, scarcely needs any argument to establish it. The recent non-stop transcontinental flights of approximately 2600 miles in less than twenty-seven hours, and the recent flight from Long Island, N. Y., to Rock Springs, Wyo., in thirteen hours, a distance of approximately 1900 miles, are indicative of what may be expected in the future. Banks the country over are continually transferring funds and securities from one city to another; a considerable saving in time will be effected when these packages are forwarded by air, especially when night flying is commonly undertaken. This saving of time will result in a gain of the interest now lost while funds are in transit, the totals of which run into large figures. The air mail has already blazed the way in this form of transportation and has demonstrated conclusively the advantages and practicability of such a service.

Other valuable documents and express matter, particularly perishable articles, will eventually be carried by air along the commercial airways. With the establishment of chains of landing fields along the principal traffic routes of the country will come a general awakening of interest in the use of passenger-carrying aircraft. There is a permanent place in our economic life awaiting aeronautics, wherever a saving in time is found to be either necessary or desirable.

U. S. Coast Guard Uses Aviation in Peace Time

Rear Admiral W. E. Reynolds, U. S. Coast Guard commandant, said in part:

The scope of work of Coast Guard aircraft was comprehended as follows:

- (a) Locating vessels in distress at sea in waters contiguous to the coasts, and carrying such assistance to them as practicable.
- (b) Locating derelicts at sea within the practical cruising radius of the aircraft.
- (c) Carrying life-saving line from shore to a vessel stranded near the beach beyond reach of line-throwing gun.
- (d) Assisting various units of the Government to more quickly and efficiently perform certain duties by carrying their representatives in aircraft to isolated points.
- (e) Providing rapid transportation for emergency medical aid to persons at remote sections.
- (f) Assisting fishing industries by locating schools of fish.
- (g) Patrolling territories for the enforcement of Federal laws and cooperating in the enforcement of State and local laws.
- (h) Assisting aircraft in distress. In addition, any direct or indirect assistance rendered civil aviation was considered an encouragement to aviation in general and a proper function of the station.

Searching for vessels at sea proved more complex than would at first appear. It became apparent that flying-

boats alone cannot locate a vessel at sea with the degree of accuracy necessary for a Coast Guard cutter to proceed directly to that point either to rescue the persons on board or to save the vessel. This part of the work must of course be done by a surface vessel.

In assisting various Bureaus of the Government to perform certain duties with despatch and greater efficiency, only limited opportunities presented themselves for this service, but even so the varied uses the planes were put to in this endeavor are enumerated:

Lighthouse service inspectors were carried in a few hours on trips to isolated lights and beacons which, with the usual transportation or lack of it, would have required days to complete.

A route for a telephone line for the Government, part of it being a submarine cable, was determined upon after a survey of the locality from the air.

Mosaic photo-maps were made of towns and areas.

Swamps and districts suspected of moonshine stills were flown over with deputy sheriffs as passengers and observers, and as a result stills were located and destroyed.

Coast Guard inspectors were carried to isolated points and an inspection completed which would have required days under ordinary transportation conditions.

Wide Range of Work for Planes in Agriculture

H. C. Wallace, Secretary, U. S. Department of Agriculture, said in part:

Although the use of airplanes by the United States Department of Agriculture is hardly beyond the experimental stage, enough success has attended the trials to indicate their importance in several lines of work. These activities are of different natures and the requirements vary widely. In some instances it is not the actual use of the aircraft itself, but the working out of problems incident to the change in methods that is the drawback. In one instance, at least, the airplane has been found an excellent supplement to the present time-tried system but not of enough value to cause a reorganization. Lack of funds has prohibited more than an initial test in some of the lines of work where the airplane has been found useful.

According to Dr. L. O. Howard, Chief of the Bureau of Entomology of the Department, planes might be of great use in locating green fly damage to wheat. In winter wheat in Texas and Oklahoma the insect appears first in spots which it is important to recognize immediately. Such spots may be seen from above when they would not be noticed by a man on the ground.

Under the supervision of the Department of Agriculture the use of airplanes for dusting cotton was tried in a preliminary way during the summer of 1922 in certain areas of northern Louisiana and Mississippi. Although the insect in these tests was not the cotton boll weevil but the cotton leaf worm, which was particularly bad at that time, the results showed that a very even distribution of dust could be obtained.

Furthermore, dust delivered from the airplanes is much more finely divided than that from ground machines because of the force with which it is driven from the hopper by the back wash, or air from the propeller. A smaller amount of poison is thus required to the acre than when ground machines are used. Successful distribution can be made from flying no lower than 200 feet on a quiet

day, although fields have been dusted from flights as low as 30 feet.

For these tests three machines were loaned to the Department by the War Department. Congress has appropriated \$40,000 for carrying on the experimental work.

The airplane has been used with success by the Forest Service in its fire-control work in the big forests of the West. In certain features of the work it is a very valuable adjunct.

Technical Research Aids Progress of Plane Design

Dr. Joseph S. Ames, director, Physical Laboratory, Johns Hopkins University, Baltimore, Md., and chairman, executive committee, National Advisory Committee for Aeronautics, said in part:

In designing an airplane or airship one obvious feature is to make the structure of sufficient strength to withstand the stresses to which it will be subjected in practices. These stresses are due to the pressure of the air as it flows past the aircraft. These have what may be called "normal" values when the aircraft is flying in a straight line on a level course; but when it is maneuvering these stresses will have "abnormal" values. The designer must, of course, allow for the maximum stress which may occur under any maneuver. During the past year the pressures over all parts of an airship and over all parts of certain types of airplanes have been measured when the aircraft was in steady flight and also when it was making difficult and trying maneuvers. The information thus obtained for the first time will put into the hands of the designer a great mass of data, of which up till now he was entirely ignorant. He will know how to design a wing, for instance, which is sufficiently strong at each point, but does not have too much weight owing to bad distribution of strength. His whole problem now becomes definite for the first time. In the design of an airship in the past, ignorance of the stresses on the airship produced by turning the rudder or elevators had caused the constructors to take precautions, which, in view of the facts learned the past year, were misguided.

Another feature of the design of aircraft is to make the size and shape of the movable parts—rudder, elevator and ailerons—and of the fixed subsidiary surfaces, such that the aircraft may be controlled and maneuvered and at the same time have proper stability when in flight. In the past only certain empirical facts were known; but now, as a result of the investigations referred to, the general properties of such surfaces have been developed. So far as the tips of the wings are concerned, a great amount of information has been obtained referring to the proper shape of the ends, the best size of aileron, etc.

As is well known, airplanes differ greatly in the ease with which they are maneuvered and in the time required for a certain change in motion to be brought about. The designer must have a knowledge of facts before he can predict definitely how a machine will perform; and these facts are not yet all known. By methods and instruments developed within the past two years, all the qualities of the motion of an airplane and the motion of all the movable control surfaces which change the motion may be recorded automatically. Most recently, an instrument has been devised and constructed which may be attached to the control stick and rudder bar of an airplane and will record the force exerted by the pilot on the stick and bar and the duration of time he exerts it. By a combination of all these instruments on any one airplane we can now study all its properties in flight.

Small Vehicles Relieve Traffic Congestion

AMERICANS who visit London are much impressed at the ease with which the tiny motor cars so popular in the British metropolis are handled in the densest of traffic as well as on the twisting country roads. They are easy to manipulate and they occupy little street surface, so that they can worm their way in and out, either among other vehicles or when parking space is being sought.

Use of so many of these little cars is one reason why the London traffic problem is not so serious as it is in New York, although the English have turned to them for reasons of economy rather than traffic considerations. There may be a lesson in them, however, for American manufacturers who are finding that street and highway congestion are leading to sales resistance, although cars of the British type never will be accepted in this country.

The proposal has been advanced in some quarters that motor vehicles should be taxed in proportion to the road space they occupy. There undoubtedly is a trend away from big, cumbersome cars which are hard to handle. Cost is only one of the factors involved, for many persons of wealth prefer small, flexible cars because of traffic and parking difficulties.

Some students of the industry are convinced that universal use of smaller and lighter cars will be a factor in relieving traffic congestion. It is obvious that they would lighten the burden placed on streets and highways.

A New York automotive engineer who is now in London has written AUTOMOTIVE INDUSTRIES that he has been particularly impressed with the small taxicabs in use there, which are both more numerous and easier to handle than those in American cities. This type of vehicle does more than anything else to congest traffic in large cities. The chauffeurs, in most cases, are highly skilled drivers, but they are not especially considerate either of pedestrians or other vehicles. They always seem in a hurry, whether they are carrying passengers or merely "cruising."

One of the jobs of a taxicab driver is to look for fares, but he certainly does a lot of aimless wandering around, just cluttering up the streets. He seldom is to be found when really wanted. It is obvious that if cabs were half as big, many more of them could be operated with no greater street congestion. Those in use in this country are built to carry four or five pas-

sengers, but it is comparatively seldom they carry more than two, and often only one. This in itself results in a heavy waste of highway space.

The same is true in some measure of all automobiles. The trend is away from seven-passenger cars, but how much of the time do even five-seaters carry a full load? The impulse of a family of two to buy a car large enough to carry five is entirely commendable, for they are thinking of their neighbors and friends who are not fortunate enough to have individual transportation of their own, but the day is rapidly coming when there will be few families which do not have automobiles. It will approach more rapidly if room can be found in the roads for a greater number of vehicles. It is a question, therefore, whether motorists are justified in providing themselves with greater seating facilities than they actually need.

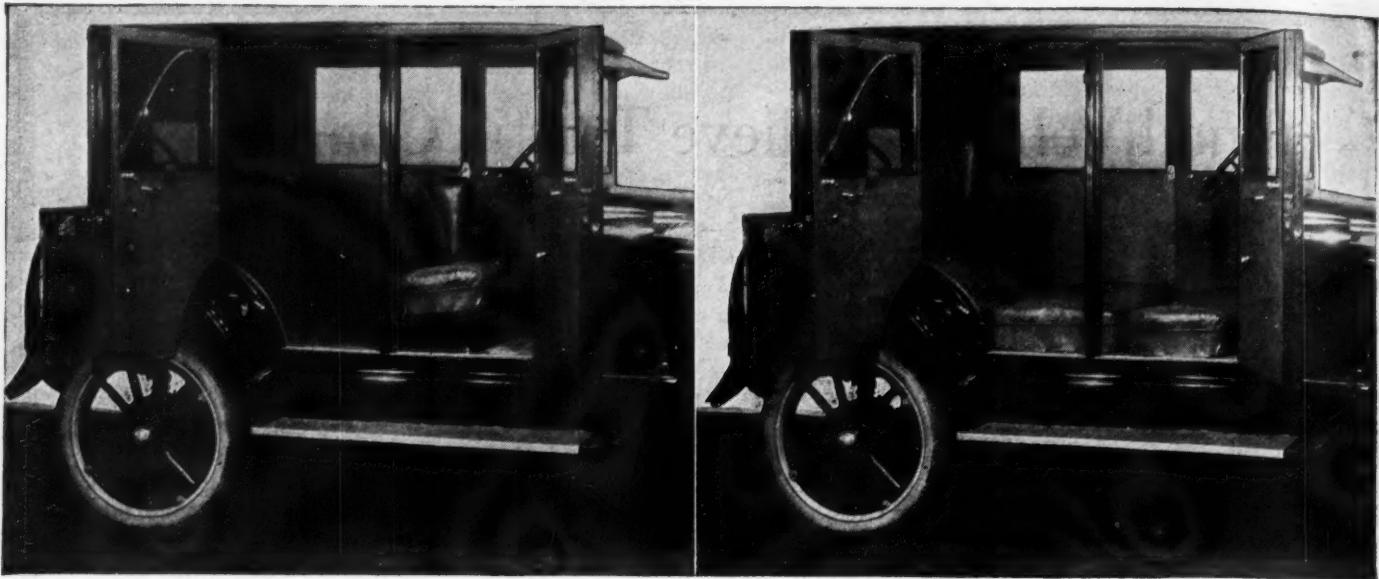
Price considerations are not so important in the United States as they are in England and other countries. The purchasing power of the American people is so high that the automotive industry need not be greatly concerned about an economic saturation point. As we have pointed out before, the chief limiting factor in motor vehicle sales is the physical limitations of streets and highways.

This artificial and wholly needless saturation point is approaching, however, and it deserves the serious attention of both manufacturers and dealers. One palliative would be the general use of smaller cars.

If motorists insist, as they have up to this time, upon keeping close to the beaten path and driving where traffic is thickest, there soon will be inextricable jams in all the larger cities. A condition approaching the hopeless already has been reached.

One remedy which could be applied immediately with good results would be utilization of all the street surface available, as proposed by Colin Campbell, general sales manager of the Chevrolet Motor Co., in a recent issue of AUTOMOTIVE INDUSTRIES. He would make all thoroughfares one-way streets and segregate traffic so that trucks and other heavy vehicles could operate only on certain streets, properly paved to carry them. Rigid enforcement of such a traffic plan might irritate motorists for a time, but it certainly would relieve congestion.

J. D.



Two interior views of new Overland Champion showing how upholstering in rear can be removed

Detachable Seats Are Chief Feature of New Overland Sedan

Interior can be used for various purposes. Volume of space back of front seat is 50 cu. ft. Straight lines feature the entire design. Exterior construction is all steel, while top and interior are covered with Duratex. Price of model is \$695.

SIMPLIFIED construction and a considerable range of adaptation are features of the latest Overland closed car which is styled the Champion. A three-door arrangement similar to that of the larger Willys-Knight coupe-sedan is combined with a system of quick detachable seats, seat backs and seat boxes which permits several interior arrangements for various purposes. The body is mounted on the standard Overland 91 chassis of 100-in. wheelbase, the price being \$695.

Doors of 24-in. width are located at each side of the front seat, while one rear door of 27-in. width is installed at the right side. The rear door swings backward, while the front doors swing forward. Each of the doors is carried by three hinges. The two doors on the right side are locked at a common metal-covered pillar, which is fitted with rubber bumpers, pilot wedge grooves and latches. Windows in the front doors are 19½ in. wide. The window in the rear door is 23½ in. wide, while the opposite window in the left side of the body is 27½ in. wide.

Severe straight lines are used throughout the entire construction of the body. The only departure from this construction is found in the contour of the top which is curved slightly in both directions. Two intermediate cross members and the front and rear frames of the body support the padded leather fabric top. The exterior construction of the body is all steel, which is finished in

black paint to the belt line. The rear quarter panels and the back above the belt is covered with the same material as the top, which is Duratex. Gutters are installed throughout the entire length of the door openings.

Nickel-plated imitation carriage bows are located at each rear quarter.

A trunk rack or platform at the back of the body is formed by extensions of the body sills being completed at the rear by a lateral ½-in. angle iron, which forms the support for the tire carrier. A metal bound trunk, the dimensions of which are 38 in. x 10 in. x 19 in., is bolted to the platform. The lines of the body are parallel from the rear end forward to the rear edges of the front doors, the width in the interior of this section being 40½ in.

Body Design

From the rear of the front doors the body tapers to an interior width of 36½ in. at the dash. The interior height is approximately 46 in. A conventional two-piece windshield with a metal visor is used at the front. Windows in the front doors are controlled by lever type regulators, while those at the rear are fitted with strap lifts. The left front door is equipped with an exterior lock, while the other two are locked from the inside.

The interior of the body, including all wall surface and the under side of the top, is finished in blue Spanish grain Duratex with the exception of the portion below

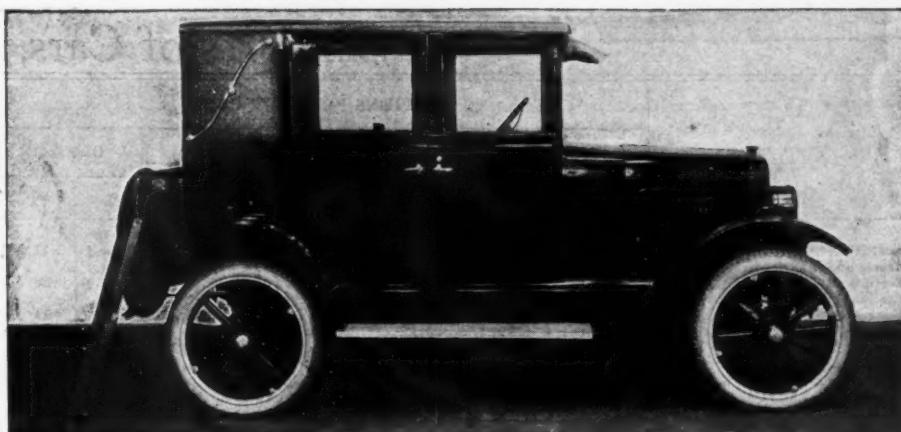
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the belt line, which is covered by the rear seat back. The finishing material is laid over a flush wood lining up to the belt line in order to prevent damage when the car is used for delivery or similar purposes. Each of the two full width seats is made up of three parts, namely, seat back, seat cushion and seat pedestal. None of these components is permanently fastened to the interior of the body. The front seat pedestal is hooked into the floor boards by strap iron hooks, which are fastened to the heel board, one at each end. Three slots are punched in the stamped steel pieces which are screwed into the floor to allow three positions of the front seat fore and aft. The rear seat pedestal is located in a similar manner.

Front and rear seat cushions are located on the pedestals by the usual steel edges which, in the case of the front pedestal, extend clear around the periphery. Seat backs are made up in separate units. The front seat back is supported at the top by stamped steel hooks which engage with threaded thumb screws that are mounted in the pillars at the rear of the front doors. The lower edge of the front seat back hooks in between the cushion and the rear section of the cushion rail. The angle of the front seat back therefore varies slightly depending upon the fore and aft location of the front seat. The rear seat back is hung by two pins in metal eyelets, which are screwed into the rear belt section of the body



New Overland Champion

and is retained at the bottom by the rear seat cushion.

As the seat facilities are all demountable, the car may be used for a variety of purposes. The component parts of the rear seat may be removed to accommodate parcels or other bulky objects for delivery service. As the back of the body is vertical clear down to the floor line, all of the space back of the front seat is available for this service. The total volume of the space back of the front seat is approximately 50 cu. ft. Loading and unloading is accomplished through the right rear door. For camping or similar service, the seat pedestals can be removed and the cushions arranged on the floor to form sleeping quarters. In addition to these characteristics, the three-door arrangement makes for convenient access when the car is used purely as a passenger vehicle.

Institute of Metals Makes Bearing Metal Investigation

A NVESTIGATION has been made by two members of the Institute of Metals of the mechanical and wearing properties of a bearing metal of a well known grade after the addition of small but increasing amounts of nickel. It seems that it has been the practice of several British manufacturers of white anti-friction metal to add small proportions of nickel to this metal, but the object of this addition has been more or less of a mystery. It has been largely held that the original idea was not a metallurgical one, nor even an engineering one, but merely to provide a means of identification of the metal of a certain manufacturer after the bearing had been cast and placed in service. The practice was later adopted by other makers, and thus the original object, that of serving as a means of identification, was frustrated. As really excellent metals were thus treated and good results were obtained in running, some virtue gradually came to be attributed to the nickel content.

A. H. Mundy and C. C. Bissett therefore decided to make a number of trial ingots of a thoroughly well tried and reliable alloy, composed of 93 per cent tin, 3.5 per cent antimony and 3.5 per cent copper. Several batches of the alloy were made, containing 0.1, 0.2, 0.3, 0.4 and 0.5 per cent of nickel, the nickel content replacing a corresponding amount of tin. Bearings were cast for trial on the Thurston machine. Tests were also made of the mechanical properties, including the tensile strength, elongation, compression strength and Brinell hardness. The results of these mechanical tests did not compare favorably with the corresponding results from the original alloy

and did not promise advantage in any direction. The running test on the Thurston machine, in which the temperature of the lubricating oil was measured as an index of the friction loss, was regarded as satisfactory. The oil became rapidly blackened, evidently by early abrasion of the bearing surface, but after this had occurred the rise of temperature became much less marked.

The final conclusion reached is that the addition of such proportions of nickel as made in the investigation does not justify itself. No substantial advantages appear to accompany its use, and some valuable properties are diminished. Of course, if certain engineers have established faith in it and it does give confidence, its use is in a certain measure justified.

A COMPREHENSIVE outline of the principles of truck and bus transportation is presented in Percival White's new book entitled, "Motor Transportation of Merchandise and Passengers," recently published by McGraw-Hill Book Co., Inc. Many pages of specific information are included which make the volume useful as a practical handbook for motor vehicle operators.

It should be highly useful also to truck salesmen, many of whom have an all too limited knowledge of how to analyze a prospect's transportation problem. This book gives, among other things, a detailed outline of the factors to be considered in such an analysis, which could be used to great advantage in a practical way.

Exports of Cars, Trucks and Tires for

COUNTRIES	GASOLINE PASSENGER CARS								GASOLINE TRUCKS					
	Up to \$500		\$500 to \$500		\$500 to \$2000		Over \$2000		Up to 1 ton incl.		1 to 2½ tons		Over 2½ tons	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
Europe														
Austria	4	\$1,888			1	\$878	1	\$3,291	1	\$531				
Azores and Madeira Is.	2	750	1	\$601	2	1,903	2	970						
Belgium	405	146,475	38	20,919	41	43,641	9	28,483	942	237,580				
Czechoslovakia	1	380			1	1,018								
Denmark	37	17,025	14	10,910	28	29,445	5	17,674	4	2,124	5	\$1,883		
Estonia	4	1,900	1	750										
Finland	1	463	11	7,500	3	3,200								
France	8	2,188	1	700	3	4,665	2	7,525	2	479				
Germany	5	2,375							2	7,463				
Greece	9	3,805	8	6,043	14	14,258	7	17,262						
Hungary					3	3,804								
Iceland and Faroe Islands														
Italy	252	82,450	20	10,920	5	6,571	3	9,031	50	17,500				
Latvia	4	1,725			2	2,606	2	4,400						
Lithuania					2	2,035								
Malta, Gozo and Cyprus	4	1,935	1	795	2	1,730	1	2,304						
Netherlands	5	425	29	20,492	64	64,317	3	10,012						
Norway	216	81,708	3	1,883	48	46,509	1	3,215					8	\$12,208
Poland and Danzig	1	475	3	1,862	4	4,713								
Portugal	11	4,082			11	16,691								
Romania														
Russia	2	606	2	1,494	2	2,538	1	3,602	2	1,597				
Spain	120	49,848	35	25,027	119	133,211	7	16,417	53	11,870	4	3,318	1	1,186
Sweden	1,709	613,580	25	17,386	307	288,837	7	18,872	633	214,814	27	22,133	8	9,038
Switzerland	17	7,836	5	2,874	14	13,637	5	12,583						
Turkey														
Ukraine														
England	283	114,099	47	34,404	118	126,581	7	25,864	227	91,556	25	23,714	3	4,919
Scotland			3	2,026										
Ireland	5	1,800	20	10,016	1	1,050	1	3,209						
Yugoslavia, Albania and Fiume														
North and South America														
United States	123	35,066	165	110,457	386	424,095	50	125,464	21	13,604	101	136,332	16	48,869
Canada					1	1,208								
British Honduras														
Costa Rica	2	762												
Guatemala	3	1,100	8	6,057	3	3,596	1	4,000	2	1,120	2	1,572		
Honduras	1	365												
Nicaragua	1	500												
Panama	3	1,329	6	3,867	23	25,455								
Salvador			4	2,946	4	3,974								
Mexico	556	184,728	106	71,763	131	134,223	10	29,808	99	47,908	5	4,439	11	16,308
Miquelon, Langley and St. Pierre														
Newfoundland and Labrador	14	5,140	3	2,357	4	5,215	2	4,900			2	728		
Barbados	4	1,496												
Jamaica	38	17,724	10	7,354	6	6,045			12	4,773				
Trinidad and Tobago	19	7,674							5	1,820	2	3,005	1	3,271
Other British West Indies	7	2,553			1	1,275	1	3,900	1	344				
Cuba	428	113,715	38	26,945	61	66,352	25	69,576	81	21,053	10	23,024	1	3,311
Dominican Republic	26	10,332	4	2,681	13	14,309			1	2,150	3	1,092		
Dutch West Indies														
French West Indies														
Haiti	8	3,027			4	4,400	1	2,100	3	1,412	1	1,296		
Virgin Islands	1	318												
Argentina	295	132,035	18	10,138	103	110,906	25	74,838	1	1,224	10	14,657	2	3,188
Bolivia					1	1,119								
Brazil	15	7,395	25	18,779	70	74,518	8	21,156						
Chile	10	3,744	4	2,573	15	16,050	2	5,600	50	27,819	15	14,941	3	11,934
Colombia	14	4,540			15	16,976	1	2,510	2	728				
Ecuador					1	1,043								
British Guiana	6	2,246			3	2,684								
Dutch Guiana														
French Guiana	1	364												
Paraguay														
Peru	40	14,432	1	757	13	11,986	6	18,732	32	11,980	2	2,176	2	11,900
Uruguay	216	66,178	20	14,072	17	18,205	5	18,185	100	32,309	2	2,416	1	3,400
Venezuela	33	12,962	9	6,724	7	7,742	1	2,812	11	4,171				
Asia														
Aden														
British India	98	44,716	34	21,391	47	50,613	2	5,050	6	4,970			7	10,377
Ceylon	25	11,732	6	4,543	14	12,729			3	1,537	6	5,743		
Straits Settlements	36	17,136			3	2,982								
China	46	18,464	41	30,115	20	24,093			30	10,054				
Chosen														
Java and Madreis					30	21,870	53	55,429						
Other Dutch East Indies					4	3,029	4	3,791						
French Indo China														
Hejaz, Arabia and Mesopotamia	4	1,386												
Hongkong	23	10,613	1	503	7	7,505	1	3,250	4	1,456				
Japan	192	55,493	43	26,529	22	24,114	11	27,150	141	46,286	19	19,311		
Kwangtung	10	4,041	3	1,846							6	2,184		
Palestine and Syria	32	11,883	9	6,815	6	9,445								
Persia	15	4,791												
Philippine Islands	83	31,777	41	29,105	37	39,970	5	12,684	17	6,695				
Russia														
Siam						2	1,966							
Oceania														
Australia	842	354,989	580	377,732	874	959,670	15	38,901	43	45,439	96	109,420	27	62,335
British Oceania			3	2,272										
French Oceania			1	640										
New Zealand	32	14,027	122	86,003	287	260,795	6	14,586	4	5,404	17	29,286	2	4,632
Africa														
Belgian Congo														
British West Africa	5	1,991	1	750										
British South Africa	38	16,464	84	57,646	326	329,274	2	4,521	29	29,893			1	4,60
British East Africa	12	5,152	3	2,400	8	7,489			5	3,785				
Canary Islands	15	7,158			6	5,481			11	4,815			1	1,70
Egypt	4	1,841			1	1,009								
Algeria and Tunisia														
Other French Africa	7	2,320							2	728				
Liberia									1	450				
Morocco	15	6,209			1	1,250			1	520		1	3,200	
Portuguese East Africa	2	700			2	2,200			4	1,300				
Other Portuguese Africa														
Spanish Africa	1	493												
Italian Africa														

July, 1923

Canadian Exports

ELECTRIC VEHICLES			PARTS		TIRES				PASSENGER CARS		TRUCKS		PARTS		COUNTRIES		
					Casings		Solid								Europe		
No.	Value	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	Austria
			440	\$7,128			436	\$879								Azores and Madeira Is.	
5549			479	7,475			458	821	27	\$24,336						Belgium	
181,526			130	1,306	10	\$265	247	463								Czechoslovakia	
779,363	1,480	16,875					1,804	2,760	1	608						Denmark	
405									1	1,128						Estonia	
834	383	4,557					568	1,035								Finland	
255,218	546	3,732			27	170										France	
280																Germany	
4,510	1,082	15,078	123	3,160	1,272	2,510	3	2,958								Greece	
35	667				100	247										Hungary	
145	1,595				100	150										Iceland and Faroe Islands	
181,754	193	1,030			275	516										Italy	
2	60				2	8										Latvia	
																Lithuania	
			271	70	969		59	87								Malta, Gaza and Cyprus	
8	\$3,739	16,406	1,052	13,741	40	654	1,238	2,046	114	71,800						Netherlands	
		26,159	3,226	46,912	45	3,907	2,769	4,386	5	3,931						Norway	
		2,623							2	1,972						Poland and Danzig	
		916	359	3,920			245	411								Portugal	
		51	121	1,062			44	63	2	1,972						Romania	
		190														Russia	
		387,679	760	9,174	141	4,483	760	1,300	6	6,567						Spain	
6	9,921	28,039	4,703	54,031	31	1,316	4,695	10,931	54	39,739						Sweden	
		4,655	299	5,837			305	693	16	11,087						Switzerland	
																Turkey	
			896													Ukraine	
3	4,020	280,607	18,945	148,563	2,446	50,941	21,153	31,224	479	231,791	283	\$128,739	25,751				England
		8,712	381	4,661	80	1,690	488	932								Scotland	
		29,460	458	4,160			375	486								Ireland	
		981														Yugoslavia, Albania and Fiume	
																North and South America	
																United States	
4	6,815	1,518,311	7,340	66,323	94	3,085	2,967	5,263									Canada
		243	5	39			28	58								British Honduras	
		266	66	1,051	17		413	83								Costa Rica	
		2,847	92	1,756			41	88								Guatemala	
		1,476	204	4,207			212	495								Honduras	
		446														Nicaragua	
		8,375	246	3,231	92	1,598	490	826								Panama	
		1,259	6	227												Salvador	
		92,661	7,551	70,413	302	9,275	10,138	15,562	4	5,484						Mexico	
		10	6	23												Miquelon, Langley and St. Pierre	
		2,027	292	3,512			253	407	7	5,665	3	1,170	3,961			Newfoundland and Labrador	
		1,033	45	572			116	209								Barbados	
		8,761	583	7,058	14		629	1,025								Jamaica	
		4,616	172	2,111	10	241	236	252								Trinidad and Tobago	
		3,400	58	725			64	143	11	8,525						Other British West Indies	
		115,353	5,780	65,176	657	23,001	6,478	11,008	10	9,422						Cuba	
		11,831	1,426	15,113	44	1,732	1,530	2,525	1	1,002						Dominican Republic	
		991	117	1,241			158	256								Dutch West Indies	
		1,130	100	1,008	6	85	50	80								French West Indies	
		6,627	137	2,064			361	581								Haiti	
		333	41	483			46	67								Virgin Islands	
1	2,621	165,980	6,354	71,973	48	2,068	6,219	9,322	79	62,293						Argentina	
		1,064	4	102			4	13								Bolivia	
		108,797	2,186	25,595	48	4,099	6,937	6	7,294							Brazil	
		37,386	332	4,227	50	1,085	706	1,170	14	21,047	4	5,428	2,341			Chile	
		11,262	455	9,029	26	1,178	551	758	1	1,325						Colombia	
		4,085	130	2,165			112	231								Ecuador	
		1,186	82	927			160	304	3	3,738						British Guiana	
		85	64	526			32	44								Dutch Guiana	
		212	22	309												French Guiana	
		315														Paraguay	
		26,302	917	12,900	53	1,454	748	1,375								Peru	
		66,359	980	12,096	22	229	200	354	3	3,136						Uruguay	
		7,319	759	10,097	5	68	1,622	2,578	4	4,408						Venezuela	
																Asia	
		590	216	1,972			137	202								Aden	
1	4,500	29,727	681	6,753	126	2,929	489	943	313	128,734	50	16,700	4,933			British India	
		2,192	209	2,111	16	456	49	100	38	16,810	12	4,008	5,900			Ceylon	
		11,029	407	4,063	18	530	161	290	155	61,912	12	4,008	11,592			Straits Settlements	
		15,403	572	7,629	6	102	459	6	2,990							China	
		2,262	6	60			4	8								Chosen	
		8,010	1,339	22,686	298	7,537	1,141	2,536								Java and Madiera	
		1,002	1,070	9,917	21	417	101	211	201	98,474						Other Dutch East Indies	
		1,698	28	60			8	12								French Indo China	
		2,940	2	22			102	168								Hejaz, Arabia and Mesopotamia	
		6,507							4	1,810						Hongkong	
11	12,000	117,064	2,817	27,837	274	3,444	1,620	2,453								Japan	
		2,763	279	3,343			97	244								Kwantung	
		236	50	365												Palestine and Syria	
		24,270	5,534	64,197	408	8,012	4,203	6,249								Persia	
		39	64	717			88	162	6	1,898	14	4,676	2,277			Philippine Islands	
																Russia	
		189,219	1,860	31,482	435	14,143	2,579	4,834	1,487	626,936	599	202,306	51,439			Siam	
		1,428	12	124			230	371	15	195,346	35	11,746	3,643			Oceania	
		376	14	272			185	350								Australia	
	1	2,215	57,329	6,382	86,755	741	16,702	3,432	9,529	707	295,988	126	43,384	7,955			British Oceania
		750														French Oceania	
		36,790	741	15,587			910	2,598	2	576						New Zealand	
		61,202	1,964	26,414	20	427	5,892	8,932	407	195,346	35	11,746	3,643			Africa	
		3,157	210	4,352			230	371	15	5,974	10	3,310	4,686			Belgian Congo	
		2,402	211	3,322													

More Distribution Points Needed

Progress is best measured
by comparison with growth
of price class as a whole.

THREE ought to be one dealer in every town who is familiar with the Planet, according to Henry Jones, the Plant advertising manager. He thinks the exclusive dealer idea cannot be applied in many instances. President Billings expresses some thoughts on getting wider distribution.

By Harry Tipper

"**I**N spite of the fact that we have been quite successful for a small company in the building of cars in our price class, we do not appear to be holding our own with the growth of the business." The president of the Planet Motor Car Co. leaned back in his chair after the above remark as though he were expecting some discussion of the subject. He was not mistaken in his expectation.

James Chance, his sales manager, who was somewhat proud of the record of his company, came back with "I don't quite get you, we have made a greater number of cars each year and what's more we have made a substantial profit. Why, the first year I was over here I don't believe we made more than a hundred cars and this year we should do 10,000 if business keeps up at all in the next three months. That looks like a lot of progress to me."

"So it is, Jim," replied the president, "and we more than held our own during the first two or three years, because we had a good car and we were conservative about changes, but if you take the production in our price class for the past six years and compare it to our own, you will find out that we are falling behind the industry a little in our actual curve of progress. It is not anything to be alarmed about, but it is something which should be watched or we may be alarmed later on."

Good Service Required

"Don't you think we have spread too thin for one thing," queried Henry Jones, the advertising manager. "There are a lot of places in this country in which there are a few people who would like to own a Planet car, if they could be sure of any reasonable service and a regular contact with some one in the trade who was interested in seeing that the car gave good service."

"That's only half the statement. It is not so much that we are spread thin," Chance cut in, "but the fact of the matter is that most of our distributors are running a retail business to a considerable extent. They are not very busy getting dealers except in the territory where they are sure of a good return for their trouble. As a consequence we are not represented at all in scores of towns where there are several automobile dealers, garages and other establishments which are prospects for a Planet motor car franchise."

"That's just the point, Jim. I do not believe that the Planet franchise will enable a man to make money in lots of those places. The market for the car is too restricted to make the dealership attractive by itself, so we have no representation in those places and still there

are a number of cars in our class sold in every one of them without our getting the share of that business which is coming to us."

Exclusive Dealers Opposed

The advertising manager was off on a favorite topic of his and it was hard for him to stop. "I believe that the time is coming when a lot of these exclusive dealerships will be a thing of the past in a majority of the towns in the United States unless the car manufacturers each extend their line to include a sufficient variety to make a dealership of that kind worth while. If that happens and we have not established ourselves, we will be that much worse off than we are today. I think our distributors should go out on a regular campaign to get a lot of dealers who will sell a few Planet cars to customers who want something different from their regular line and make those orders worth while to the dealer and the means of tying him up to the Planet Motor Car Company for the rest of his life, if we continue to behave ourselves."

"Why wouldn't it be better for us to make another type of car," Chance replied, "say a four or a light six, something in the class between a thousand and fifteen hundred retail price. In that way we would have something to offer that dealer and at the same time we would extend our market into a larger price group as far as production is concerned. I favor that idea. We have done well with the Planet, it has an excellent reputation for wear and service, thanks to friend John Carter over there. If we put out a cheaper car, that is a car of a less expensive type, but just as serviceable against competition as the Planet car is in its class, we will have a lot larger production to enable us to make economies in manufacture and we will be keeping a larger part of the market in our control, instead of having to hang on to it by our teeth, so to speak, through the dealers giving us a little business that is of no value to them and that we might as well get."

"Of course, Henry has had that bug on the exclusive dealer for some time and we all know that there are no such policies as entirely exclusive distribution in the field. We make no pretense that all the dealers in Planet motor cars are exclusive. In fact, I don't suppose that 50 per cent of them are, so that from that standpoint we might as well go further and get more dealers who use the Planet car as a second line, but while we are about it I think it would be much more valuable to investigate the cheaper car matter as an addition to our program. In the long run I think it would be better in every way."

"The chances are that you fellows are both right and wrong," said President Billings. "It's true, Jim, as you say, that there are many advantages in making a line of cars which offers the dealer some additional opportunities for making money through the same franchise, but that sort of program means a lot more capital, it means a lot more manufacturing space and a lot of investment before we know whether we will be able to really make more money than we are putting away today. Then, again, I think it is somewhat ridiculous to get into another price group in the car field when we have not quite kept pace with the opportunities in this one. I am very much in favor of getting ourselves at least up to the growth of the industry before we add to our troubles by instituting another line and getting the bugs out of it. You know how it is, despite the experience in designing and shop practice and all that we have had, such a venture would not be up to our Planet car for a couple of years after we began to send it out into the hands of the car owner and we are as capable of building and testing a car as any outfit in the country. That sort of thing simply cannot be done without its period of grief."

Increasing Selling Points

"Your idea is a fine thing to keep in mind when we have gone so far in our present job that we cannot hope to get any real increase in production within the price class to which the Planet job belongs, in other words, until we are growing faster than the total production within the price group. For the present I think we might discuss the other matter, how are we to get the distribution in those towns which are not now open to us, so that we can bring our production up to the percentage limit."

"That's the beauty of my plan," returned Henry Jones. "It is true that the Planet has an excellent reputation in those places where it has been sold regularly and serviced properly, but that is not enough for our purpose. No amount of advertising and promotion to the car owner will give a reputation to a car unless it stands well with the trade in that vicinity and there are local people who stand responsible for its service. Then there is the matter of second-hand value, that is a concern to a good many car owners. Second-hand values are more stable among those cars with a local representation in almost every place and a known character of service."

"There are a lot of changes in this retail field in the automobile business as you took occasion to remind us not long ago, Chief, so that there are a lot of people in the trade who would be entirely non-committal when it came to the value of a Planet in their locality.

"Now, if we will make it our business to make the Planet known to every worth while retailer in the United States and do our best in every way to get him to sell a few we will stand at the head of our price class in a little while and the comparisons you made will not be hurled at us any longer."

Build Up Reputation

"Then, if we want to take Jim's suggestion and add to our line we will have a large possibility of sale already made for us by the extension of that reputation so that it is solid in every nook and corner of the country. I have been looking into this trade angle for some time very carefully, especially since I got that "call-down" from the Chief some months ago and I am sure that we can build up a very much larger area of known reputation that we possess today if we will work out our plans thoroughly and not imagine that we are known just because we know ourselves pretty well and we have sold a good many cars, besides making some money."

"I took a trip on my vacation and took occasion to talk with every worthwhile dealer I found on the road, there were an astonishing number of them that didn't seem to know the car at all, although they had a vague memory of the name in some cases. I was quite humiliated before I got through to think that I had been working on this job for a good many years and could go through the country and find so many people in the trade who did not know the Planet car and didn't seem to care about it, either."

"Well, there is a good deal in what you say, Henry," the president replied. "It should be possible to service a Planet car in any place where a man might want to buy it, and there should be one man, at least, in that town who knows the car and is satisfied that it is a worthwhile car, even if he has not been in the trade very long. Suppose you and Jim get together and lay out a plan of action for this next year which will be calculated to put the Planet at the top of its class and which will at least give us a thorough trade reputation. When that is done it will be time enough for us to consider the question of a cheaper line, where there is more competition and a keener necessity for distribution than we face at present."

Two New Books

"WHAT, When, and Where for the Motorist" is an interpretation of the New York State motor vehicle law, written so that an automobile owner or pedestrian can understand it. It explains what the car owner should do under various circumstances and what various parts of the law mean to him.

It is written by Frank Wenzel, Chief of Automobile Bureau, New York State Tax Commission, and gives "information which every owner and user of the automobile should possess." This information covers 120 pages, but perhaps one can be a successful driver and owner even if he doesn't know everything contained in the treatise.

Seriously speaking, however, the book does contain much useful data and should be a real help in solving traffic and car operating problems. It is published by the author.

* * *

Taylor's principles of scientific management have received a great deal of study abroad in recent years and numerous books have been published in German and French to explain them. There has just come to our desk a new volume on the subject in which "Taylorism" is expounded in French (*Les Méthodes Modernes d'Organisation Industrielle*, by L. Benoist, Gauthier-Villars et Cie., Paris).

The book is intended for young men entering upon an industrial career. In the first part it gives a general view of our modern industrial life, its activities, its objects and the powerful resources of which it is able to avail itself. In the second chapter are explained modern methods of industrial organization, this forming the backbone of the work.

Finally the last section is devoted to illustrations of the calculation of machining times in mechanical work. These examples are given in the form of tables giving the machining times for parts illustrated by a drawing over the table, in a wide range of sizes.

As stated above, the work is intended to familiarize young men just entering business life with modern methods of conducting business, particularly in the mechanical manufacturing line, and as such it should serve its purpose.

AUTOMOTIVE INDUSTRIES

AUTOMOBILE

Reg. U. S. Pat. Off.

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Selling an Idea

FOUR-WHEEL brakes are new to the American public. Despite the fact that automotive engineers have been familiar with the principle for many years, this type of brake, when actually adopted, came as a distinct novelty to the general public. People have evinced considerable interest and curiosity in the new mechanism, just as they do in any unusual feature, but something of a jump is needed to carry them from curiosity to conviction.

Every new idea meets with a certain amount of inertia which must be overcome before it is accepted. Those companies which have adopted four-wheel brakes have before them the task of selling the public on the four-wheel brake idea; it is a common task in which each one is equally interested. Until it has been accomplished fully no one of the four-wheel brake cars can hope to realize its full market possibilities. Consequently, it doesn't seem logical to get into many public disputes about the merits of particular

mechanisms until the work of selling the four-wheel brake idea as a whole has been completed.

Manufacturers who believe in the efficacy of the two-wheel brake and who have retained that type, naturally are trying to make motorists distrustful of the four-wheel designs. Mutually destructive criticism among makers of four-wheel brake jobs does not help allay any distrust that may have been generated.

Proponents of the four-wheel brake might well adopt as their motto for the time being the well-known oath of the Three Musketeers.

Body Building Improvements Come Rapidly

N ECCESSITY is still the mother of invention and her family is rapidly increasing. This is evident from the fact that marked improvements in body production, brought about largely by the demand for cheaper closed cars, are coming to light in many quarters. Some of these have to do with methods of constructing the body itself and others to the method of finishing.

It has long been realized that all-metal bodies possess certain decided advantages. One of the most important of these is the ease and rapidity with which the body can be provided with a durable finish.

On the other hand, all-metal bodies have certain disadvantages. Chief among these is the exceedingly high cost of die equipment which has precluded use of this type of construction except in the case of very large producers, and even in these cases has made changes in body lines almost prohibitive in cost, especially in the case of closed cars.

Bodies with wood frames could not, in the past, be finished with japans requiring baking at very high temperatures, owing to the shrinkage and charring of the wood and the opening up of glued joints. Two recent developments, however, have made it possible to use a high bake enamel finish and still employ a wood frame. In one of these the frame is covered with a preparation which protects the wood and is said to prevent the moisture from leaving it during the baking operation. In another the metal panels and moldings are japanned and baked at high temperature prior to their application to the wood frame.

In both of these new processes the size and cost of dies is minimized, changes in body lines are relatively inexpensive and repairs of parts injured in service are no more difficult than with other wood-and-metal bodies. Furthermore, the design can be such as to avoid deep forming operations and the consequent likelihood of producing somewhat irregular surfaces which require much handwork in preparation for application of the japan.

Another important development is the production of lacquers, available in many, many colors, which are suitable for body finishing and are said to provide an exceptionally durable surface. While these do not lend themselves to application by dipping and are therefore more expensive to apply than japans, they are easily sprayed on and require little, if any, drying equipment for use following their application.

Surprising Progress Made in Year in Transport Coordination

SLOWLY but surely executives of steam and electric railroads are admitting, more or less reluctantly, that all forms of transportation should be complementary rather than competitive. Only the hidebound reactionaries who prate about the good old days when there were neither automobiles nor flappers cling to the archaic notions which animated them five or ten years ago.

Only last January, in discussing coordination of transportation, AUTOMOTIVE INDUSTRIES said that if representatives of the various interests could get together around the conference table it would not be difficult to evolve some workable sort of agreement. These round table conferences are being held. They are resulting in a new spirit of understanding, toleration and mutual respect. Leaders of the automotive industry, in particular, have impressed their confreres with their broad-mindedness and liberality as well as their hard common sense.

Almost submerged in the tremendous flood of business which has been pouring in steadily for the last year, it is not surprising that the industry has not been entirely conscious of the remarkable progress which has been made in solving some of the major problems of coordinating highway transport with the older forms. Most important was the establishment of the Transportation Conference by the United States Chamber of Commerce.

Steam railroads now concede that much of the short haul freight traffic, especially in congested districts, should be handled by trucks, with store door delivery and collection service. The automotive industry has conceded that this work should be undertaken by the railroads themselves.

The light has dawned in the electric railway world even more rapidly. The rapidity with which the use of buses and trackless trolleys to supplement or supplant rail service has expanded has been little short of remarkable. Even the Public Service Corp. of New Jersey, which has fought jitneys relentlessly but has lost millions of passengers to them, has made a wage increase which would settle a ruinous strike conditional upon permission being given it to acquire these competing bus lines. If it had been willing to operate bus lines of its own in the beginning, it would have avoided much of its present trouble.

Trolley companies are learning that it is vastly cheaper to supplement rail lines with their own

buses, even at a small operating loss, than it is to lose all the business. Company after company is swinging into line and the bus market has become an exceedingly important part of the truck business. So important do the traction companies consider the bus question that the major part of the annual convention of the American Electric Railway Association will be devoted to consideration of various phases of the subject.

In a different field, but equally as important, has been the basic agreement reached by the American Association of State Highway Officials, the Investment Bankers' Association, the National Automobile Chamber of Commerce and the Federal Bureau of Public Roads on the subject of highway construction. This agreement has been the result of compromise and concession on all sides, but it has been a highly important contribution to the development of highway transport. Few within the industry are thoroughly familiar with the patient, tireless, public spirited diplomatic efforts put forth by the highways committee of the N. A. C. C. to formulate principles acceptable to all, which could be applied with the greatest good to the greatest number. It meant the welding of sound economics with practical politics, and anyone who has attempted such a reconciliation knows that it is well nigh impossible.

Many hurdles remain to be cleared before the straightaway is reached. The steam and electric railroad men who admit that there is a major place for the truck and bus in the scheme of transportation cannot forget in a day their old ideas of competition, with insistence upon almost punitive regulation and taxation, but they are learning. They are giving serious thought to the fact that regulatory measures which might be adopted now to make competition by highway transport more difficult would rise to haunt them when they go into the business themselves on a large scale.

Even superficial consideration of the developments of the past year proves conclusively that more has been done this year than ever before to solve in the public interest some of the big collateral problems of the automotive industry. And in the last analysis it is only the public interest which counts. In the field of transportation, as in every other field of human endeavor, he profits most who serves most efficiently and unselfishly.

J. D.

GOOD SALES CONDITIONS REPORTED

THE general sales conditions in cars and trucks remain good. Reports from a number of points show a falling off, but the recessions in these cases are slight and not sufficient to cause any alarm. Used cars are moving well in some districts and are accumulating in others.

Sales are dropping in the East and the Far West, with accumulation of used cars. The northern part of the country shows the same tendency.

Sales are holding up in the South and Central West.

The strong features of the market are:

- 1—Maintenance of sales volume on a good scale.
- 2—Showing made in closed car buying.
- 3—Demand for new models.
- 4—Improved country buying.

The weak features are:

- 1—Greater accumulation of used cars.
- 2—Slackening in sale of open models.
- 3—Hesitation in buying in some sections.
- 4—Increased sales resistance in some sections.

The truck market is increasing slowly, but steadily. In almost every section of the country the outlook on this class of vehicles is improving.

The economic situation is without any changes of importance.

General business shows some renewed activity, but it is still spotty, so that some sections are more active than others.

Raw material prices are unchanged, and the outlook in automotive materials is slightly more favorable in comparison with the general index of commodities.

Conditions in chief distributing centers as reported by correspondents of AUTOMOTIVE INDUSTRIES are as follows:

Some Leading Cities Advise of Accumulation of Used Cars

Minneapolis

MINNEAPOLIS, Oct. 2.—In comparison with six weeks ago a falling off in retail sales of automobiles is evident. Most companies report a decline, and the used-car market appears glutted. Buyers are taking no interest in the trade-ins except at good values. The dealers who are making profit in this line are those who observe the commercial law of buying right and selling right.

In the Federal Reserve district Minnesota leads just now. Business as a whole is a little ahead of last year with salesmen working harder to produce the results. The trade is sensing the probability that by the first of the year there will be a reduction in the number of distributing firms. It is expected that some lines will disappear from the Northwestern market.

The Federal Reserve report for Sept. 26 shows that terminal prices for wheat, corn and flax are greater than a year ago. Minnesota has become a corn State, wheat yielding only 6 per cent of the revenue from the ground.

Indianapolis

INDIANAPOLIS, Oct. 2.—The end of September marked a better retail sales condition generally throughout the State than was apparent earlier in the month, and more dealers of many lines were registering increased sales as against August which set a high record for the latter part of the year.

Practically every line that had model introductions or price cuts during late August or September is now on the strong up-grade as against the period just before these changes. Some of the most popular lines are finding more sales than they expected, and, except in the case of Ford dealers in some localities, are far ahead of records of six weeks ago.

There has been a slow-up in Ford demand recently, due, it is believed, entirely to the rumors of an impending price cut. In spite of this slowing of sales a good many strong Ford dealers are accepting no trades, though this is not general.

Used cars have sold in the last few weeks in many cases because of sharp cuts of used prices, but it is generally agreed by candid dealers here that there are far too many used vehicles in the hands of dealers.

Truck sales continued to increase, with the local as against the State market making the better record lately. Should the first half of October witness the increased brisk demand of late September it will be a banner fall sales month for this State.

Toledo

TOLEDO, Oct. 2.—Retail sales ran into a period of slackness during the latter part of September which resulted in about 20 per cent decline in volume of transactions, according to a survey of dealers.

Lack of supply of the new models and a tendency of customers to hold off until price changes and new announcements have been made is held to be responsible for the decrease in business. Sales, however, are considerably above the same period last year.

Sales of used cars have declined. During September dealer stocks of used cars decreased slightly on the average, with about ten cars to a dealer. Cash sales of new cars have increased about 23 per cent this year due to dealer conservatism with trade-ins and general prosperity.

More than 80 per cent of the present demand is for closed models. Dealers are not overstocked with open models. Business for October is expected to be good and considerably above the average for that month.

Cincinnati

CINCINNATI, Oct. 2.—Although retail automobile sales in the Cincinnati district were about equal in volume during the months of July, August and September, the total number of sales for the third quarter of the year has not been up to expectations.

This should not be interpreted to mean that business has been bad—sales on the whole were brisk, and for this reason, perhaps, the dealers in their enthusiasm, set themselves too high a mark.

High priced cars during the last month have been in slightly greater proportionate demand than the lower priced. Closed car models are coming increasingly into demand with the approach of cooler weather. The movement of used cars, in regard to both supply and demand, is fair, prices remaining at low tide. Money is commanding a relatively high interest rate, but there is sufficient to be obtained for all usual purposes of the trade. Local dealers anticipate a good fall business.

Trucks and commercial vehicles have been enjoying a normal sale for this period of the year. The farmer, with a plentiful harvest, is buying motor cars.

Salt Lake City

SALT LAKE CITY, UTAH, Oct. 2.—Automobile dealers report business as fair. Farmers have not started to buy cars, but the show at the State fair, an innovation this year, is expected to stimulate the demand among this class. Representative firms describe business as being as good as last year, and perhaps a little better.

The industrial condition of the State is improved over what it has been for some years. A healthy state exists in agriculture, mining and manufacturing.

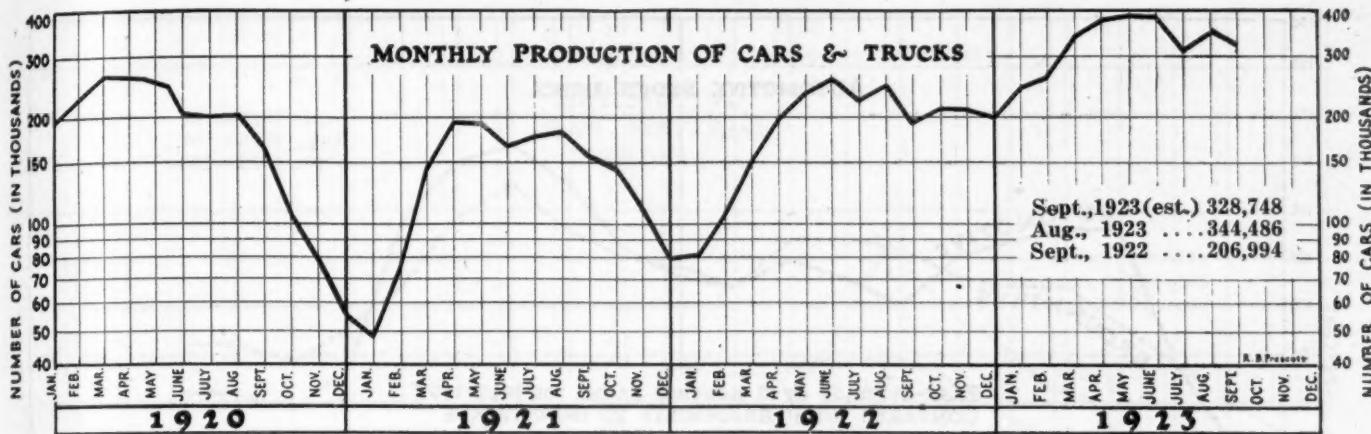
(Conditions in other cities on page 705.)



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SEPTEMBER OUTPUT REACHED 328,748



Total for 9 Months Places Production Over 3 Million Mark

NEW YORK, Oct. 3—Estimates made on shipping returns by the National Automobile Chamber of Commerce place September production at 328,748 cars and trucks.

This is a falling off of 5 per cent from August, 1923, but far in excess of September, 1922, when the count was 206,994. Last year there was a 24 per cent difference between August and September, in favor of the former.

This September count puts the industry over the 3,000,000 mark for the nine months of 1923 and, allowing for a continuance of the present pace, it would seem as if the yearly total would just about top 4,000,000 for both cars and trucks. This seemed impossible of comprehension when the industry started in on 1923 production.

Year May Exceed 1921 and 1922

It is even possible that the count for 1923 will exceed the combined output of 1921 and 1922 when 4,320,614 motor vehicles were turned out for the two years. This, however, is doubtful, but it would seem as if the industry would come within a month's production of achieving this feat.

Truck production also has been breaking records this year, although this fact has been lost sight of in the attention drawn to passenger car output.

Revised Government figures give truck production at 258,969 for the first eight months of this year, a total that exceeds the full year of 1922, when 252,668 trucks

Estimate of Output by N. A. C. C. Shows 5 Per Cent Decline from August but Big Increase Over Last Year

NEW YORK, Oct. 2—Shipping figures compiled by the National Automobile Chamber of Commerce for September give an estimated production of 328,748 cars and trucks.

The following table presents the statistics for the first eight months of this year and for the months of 1922:

	OUTPUT		CARLOADS		DRIVEAWAYS		BOAT	
	1923	1922	1923	1922	1923	1922	1923	1922
January	243,241	91,210	35,228	15,357	30,031	7,479	728	143
February	276,612	122,461	36,165	19,636	43,613	10,173	882	180
March	354,542	172,878	44,983	27,753	62,983	16,917	1,908	560
April	382,193	219,708	46,095	31,334	60,467	22,381	5,027	2,960
May	393,409	256,381	45,339	33,416	62,210	28,827	12,812	7,406
June	377,963	289,198	40,550	34,230	58,761	33,857	13,418	7,737
July	327,616	247,035	32,426	29,116	46,511	28,100	10,049	7,030
August	344,486	274,061	37,770	32,817	50,460	36,768	8,000	10,104
September	328,748	206,994	36,885	25,950	37,400	30,055	8,500	8,002

Factory shipments for the other months of 1921 and 1922 and output for 1922 follows:

	OUTPUT		CARLOADS		DRIVEAWAYS		BOAT	
	1922	1921	1922	1921	1922	1921	1922	1921
October	239,191	17,808	26,980	12,971	33,320	2,226	7,040	
November	237,087	14,264	27,232	10,528	27,376	1,402	5,070	
December	228,092	12,100	26,900	7,500	27,500	134	1,300	

Motor vehicle production segregated as to cars and trucks is as follows:

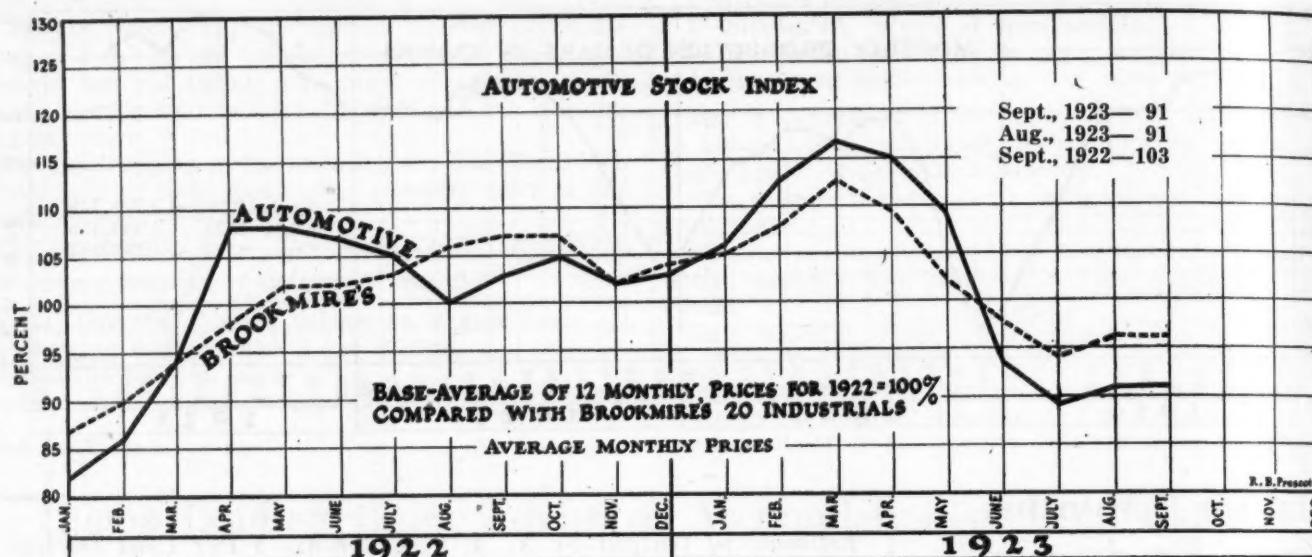
	1922		1923	
	Cars	Trucks	Cars	Trucks
January	81,693	9,517	223,708	19,533
February	109,171	13,290	254,651	21,961
March	152,959	19,919	319,637	34,905
April	197,222	22,486	344,475	37,718
May	232,433	23,948	350,181	43,228
June	263,027	26,171	337,144	40,819
July	225,079	21,956	297,257	30,359
August	249,460	24,601	314,040	30,446
September	187,661	19,333	*September	296,748
October	217,493	21,698		32,000
November	215,284	21,803		
December	207,932	20,160		

were produced. Allowing for 30,000 in September, the total today is approximately 288,000 for nine months. With three months to go, it is likely that the final count will show in the neighborhood of 380,000 commercial vehicles. The peak month of this year was May, when the production reached 43,228.

Factories are experiencing no trouble in getting their goods to market, accord-

ing to James S. Marvin, N. A. C. C. traffic chief, who reports railroads as functioning well. Driveaways have fallen off from August, showing that the main dependence is being placed in the railroads.

So completely have the railroads recovered from their troubles of last year that Marvin believes automobile shipments will be moved easily this winter.

AUTOMOTIVE STOCKS KEEP EVEN PACE**New York Exchange**

	Sept. 1	Oct. 2
Ajax Rubber	7 1/2	6 1/4
American Bosch	36 1/2	27 3/4
American La France	11 1/4	11 1/4
American La France pfd.	95	88
Case, J. I.	32	29
Case, J. I. pfd.	65	66
Chandler	53	45 1/8
Continental Motors	7 1/4	6
Eaton Axle & Spring	25 1/2	20 3/4
Electric Storage Battery	61	57
Emerson-Brantingham	1 1/2	1
Emerson-Brantingham pfd.	6 1/2	6 1/2
Fisher Body	170	162
Fisher Body of Ohio	98 1/2	96
Fisk Tire	8 1/4	6 7/8
Gardner Motor	7 3/4	6 3/4
General Motors	15 1/8	13 3/8
General Motors pfd.	81	82
General Motors 6%	81 1/2	82 1/2
General Motors 7%	96	97
Goodrich, B. F.	25	21 1/2
Goodrich, B. F. pfd.	81	74
Goodyear Tire pfd.	45 1/2	38 1/4
Goodyear Tire pr. pfd.	91 1/2	90
Gray & Davis	9	7
Hayes Wheel	37 1/2	33 1/2
Hendee Mfg.	17 1/8	16 1/2
Hudson	26 1/2	22 1/8
Hupp	20 1/4	16 3/4
Inter. Harvester	74 1/2	74
Inter. Harvester pfd.	104 1/2	106 1/4
Kelly-S Tire	33 3/8	23 1/4
Kelly-S Tire 6% pfd.	80	70
Kelly-S Tire 8% pfd.	90	80
Kelsey Wheel	95	81
Kelsey Wheel pfd.	97	95
Keystone Tire	4 1/8	2 3/4
Lee Rubber	18 1/2	16 3/4
Mack Truck	80 1/2	73 1/4
Mack Truck 1st pfd.	93	92
Mack Truck 2nd pfd.	84	85 1/2
Marlin-Rockwell	7	7
Martin-Parry	30 1/4	26
Maxwell Motors A	43 1/2	37 3/4
Maxwell Motors B	13 1/4	10 1/8
Moen Motors	24 1/2	23

Sept. 1 Oct. 2

Mullins Body	18 1/8	13
Mullins Body pfd.	88 1/8	89
Nash Motors	92	85
Nash Motors pfd A	97 1/2	97
Ohio Body & Blower	4 1/2	2 3/4
Packard	13	12 1/2
Packard pfd.	92 1/4	89 1/4
Parish & Bingham	11	9 1/4
Pierce-Arrow	9 1/2	7 1/2
Pierce-Arrow pfd.	23	17 1/2
Pierce-Arrow pr. pfd.	64	60
Reynolds Spring	20 5/8	20 3/4
Spicer Mfg.	17	13 1/2
Spicer Mfg. pfd.	90	89
Stewart-Warner	90 1/4	77 3/4
Stromberg Carburetor	70 1/2	63
Studebaker	106	94 1/4
Studebaker pfd.	113 1/4	115
Timken Roller Bearing	38 1/4	34 1/4
U. S. Rubber	42 1/4	37 1/2
U. S. Rubber 1st pfd.	96	91
White Motor	50 5/8	46 1/4
Willys-Overland	7	5 1/8
Willys-Overland	69 3/8	58 3/8
Wright Aero	9 1/4	9 7/8

Chicago

	Sept. 1	Oct. 2
Bassick-Alemite	34 1/2	32
Borg & Beck	29 1/4	27
Chicago Coach	148	165
Chicago Coach pfd.	90	90
Continental Motors	7 5/8	6 1/2
Earl Motors	1/8	1/8
Eaton Axle & Spring	25	22
Gill Mfg.	20	17
Hayes Wheel	38 1/4	...
Hupp	20 1/2	18
McQuay-Norris	19	21
McCord	34	32 1/2
Reo	17 7/8	16 1/4
Stewart-Warner	90 1/2	79 1/2
Yellow Mfg.	242	268

Boston

	Sept. 1	Oct. 2
Gray & Davis	9 1/2	...
Hood Rubber	55	55 1/4

New York Curb

	Sept. 1	Oct. 2
Cleveland Motors	28	25
Durant Motors	39 3/4	29 1/4
Durant Motors of Ind.	9 3/4	7 1/2
Firestone Tire	84	...
Goodyear Tire	10 1/8	10 1/8
Motor Wheel	9 1/2	9 1/2
National Motors	1	...
Peerless Motors	36	30
Reo	17 3/4	16
Roamer Motor Car	10	...
Stutz	13 1/2	11
Timken-D Axle	8 1/4	6 1/2
Willys Corp. 1st pfd.	4	4

Cleveland

	Sept. 1	Oct. 2
Eaton Axle, Spring	21 1/2	21 1/2
Firestone	62	65
Firestone pfd.	82	85
Goodrich pfd.	...	77 1/2
Goodyear	10	10
Goodyear pfd.	45 1/2	38
Jordan pfd.	200	...
McGraw Tire	...	1/2
Miller Rubber	65 1/2	...
Miller Rubber pfd.	97 1/2	...
Peerless Motors	36	34
Sparks-Withington	23	...
Stearns, F. B.	18	...

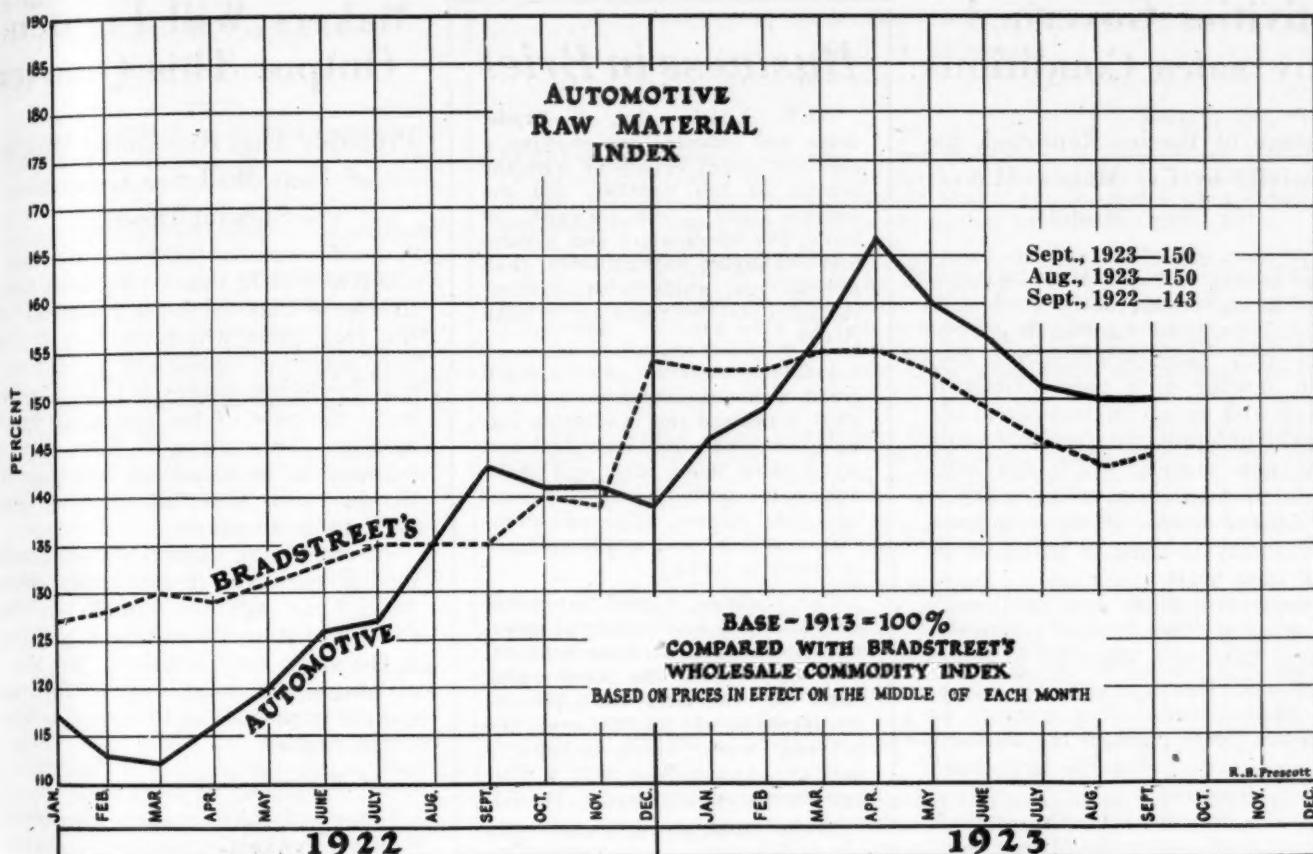
Detroit

	Sept. 1	Oct. 2
Continental Motors	7	6 1/2
Edmunds & Jones	35	...
Ford of Canada	414	414
Motor Products	125	138
Motor Wheel	9 1/2	9
Packard com.	13 1/8	12 1/2
Packard pfd.	94 1/4	...
Paige	22 1/4	19 1/2
Reo	17 1/8	16 1/2
Timken-D Axle	8 1/4	6

Philadelphia

	Sept. 1	Oct. 2
Electric Storage Battery	60 1/2	58 1/2

RAW MATERIAL PRICES REMAIN QUIET



Slackening in Demand Noted in Cities in California

San Francisco

SAN FRANCISCO, Oct. 2.—Exact figures on sales for September and for the third quarter of the year are unavailable at the moment, but dealers report slight improvement in sales of new cars due to reductions in prices. Sales are mainly to buyers who do not own cars, as price cuts have so reduced values of used cars that many owners will not turn them in, but are having them rebuilt for further use.

While general sales conditions of new cars are better than they were in September of last year, cars are not moving as rapidly as they were six weeks and two months ago. This is partly due to the fact that price cuts had not been made six weeks ago and the turn-in value of used cars was higher than at present.

Uncertainty of results from dried and canned fruit crops also is a factor. Dealers believe figures will show sales for the third quarter of this year about 30 per cent better than those of the third quarter of last year. Indications are that October will show an improvement, probably slight, over September.

The used car market, except in cities where the Appleby plan is in use, is quieter than it has been in twelve

months. Trucks are maintaining their usual sales for this time of year, and, proportionately, are doing as well as passenger cars.

Kansas City

KANSAS CITY, MO., Oct. 2.—Two factors are definitely blamed for the failure of September to show a highly gratifying volume of passenger car and motor truck sales—rain, and lack of desired models. The rain has been a particular deterrent to truck sales, but it has also hampered operations in the rural districts, cutting down the volume of sales to farmers.

This is particularly regretted, because it is known that farmers, who had been presumed to be in the market for little of anything, have been buying. The volume in the cities has been quite satisfactory for many dealers, somewhat ahead of August in fact. But some report fewer sales in September than in August.

Many dealers say they could have sold numbers of closed models if available. A significant indication of tendency is the report that used car prices of some higher priced models, are showing declines around 25 per cent. The trade generally anticipates a good business in October and November.

Los Angeles

LOS ANGELES, Oct. 2.—The demand for new motor vehicles throughout this section of the country is slackening but not to an extent sufficient to cause any alarm. Conditions may be said to be somewhat better than the average. Inability to make deliveries is felt.

This is true particularly of lines that have announced 1924 models, incorporating many drastic changes. Heavy advertising aroused interest, resulting in many orders and because of failure to make delivery cancellations now follow.

Several dealers, heavily stocked with last year's models, have a serious problem to face as their new cars have killed demand absolutely and although willing to sell at a big discount, the public will not buy as it feels it is purchasing obsolete types.

The used car market is practically dead. This is result of new car situation and declining prices. Hundreds of used cars may be bought at prices far below the allowance figure accepted by dealers on trade-ins. The annual influx of cars driven here from the East and put on the market by owners also is having a tendency to reduce prices.

Conditions in other cities on pages 716 and 717.

CAUTION RULES IN PLANT OPERATION

Activities Governed by Sales Conditions

Shortage of Bodies Reported, Especially by Car Makers Having New Models

DETROIT, Oct. 2—Manufacturers are adopting conservative production policies going into the fourth quarter of the year, policies which will keep output flowing at a pace strictly in keeping with actual business demands. With the exception of companies with recent new models, which are shipping to meet accumulated sales and to give dealers stocks of the new cars, this industry is close to being on an actual sales basis.

Everywhere there is a noticeable tightening of lines. Many companies are experiencing a shortage of closed bodies and there is general agreement that closed bodies present an extremely large part of the demand, running ahead of even the large business of other years.

Several manufacturers with new models report that business would be as large in October as in earlier months of the year if they could get closed bodies in quantity and speed production to points possible when open models are selling. There is unanimity of opinion that there is good demand for cars, and the general feeling is that the fall and winter months will compare favorably with those of other years, if not exceed them.

Great Demand for Closed Cars

Demand throughout the northern section of the country has switched almost solidly to closed cars, manufacturers report, with continuing good demand for open models in the southern section of the country and on the coast. Open car buying outside of these sections is spotty, being stimulated somewhat by recent price cuts, but on the whole being supplanted by demand for the closed models. Business in the central west is reported showing a somewhat better tone.

In the low-priced lines there will be little reduction, if any, in production during the month. Ford Motor Co. will continue to operate at about 7000 daily and Chevrolet declares operations will approximate 2000 daily. The Ford figure for the month has been fixed at 183,700. Business is reported to be holding up very well at all points except in some sections of the Northwest.

Middle-priced car manufacturers will go into October at much the same figures as have obtained during the last two months, except for the inequalities occasioned by growth in closed car demand.

Business in Brief

NEW YORK, Oct. 2—Trade, crops and industry are showing a slow but steady expansion with the coming of fall weather, and the general trend is still forward. In trade, the wholesalers and jobbers find fall buying slightly better than a week ago, while in the case of the retailers the gains are a trifle slower.

Industry reports an upward trend, although petroleum is somewhat depressed and production cut. Sales of crude iron and steel and scrap show more ease, and there are some reports of increased business over August. The coal situation is well in hand, and bituminous is easier in price.

Car loadings, a good barometer of total trade and industrial movements, show the third largest total ever recorded in the week ended Sept. 15. The total was 1,060,580, an increase of 131,722 over the previous week, which included a holiday. Comparison with a year ago shows an increase of 114,661.

In the building world there also are encouraging reports, for in the leading cities there is reported a gain of about 10 per cent in August over July, while it was 10.8 per cent better than in August, 1922.

Bank clearings of \$6,627,229,000 for the week ending Sept. 27 are reported, a decrease of 7.1 over the preceding week, but an increase of 2.1 per cent over the corresponding week a year ago. This is the first gain in eleven weeks.

Bank debits for the week ending Sept. 26 totaled \$6,696,388,000.

In the market railroad stocks were higher, industrials irregular, money firmer, bonds more active and exchanges erratic.

On the basis of early operation Buick's month will run around 20,000; Studebaker's about 10,000; Hupp, 3000; Dodge Brothers, 15,000; Olds, 5000; Oakland, 5000; Rickenbacker, 1250; Maxwell-Chalmers, 6000, and Reo, 5000. Hudson-Essex and Paige-Jewett schedules will be interrupted during the month by plant changes.

In the higher-priced lines Cadillac is operating at a rate of about 2500 for the month and Packard at approximately 2000. Wills Ste. Claire is continuing at approximately the 300 monthly rate, preliminary to increased operations later in the year.

Makers Will Lighten Output This Quarter

Probable That Remaining Months of Year Will See Gradual Slowing-Down

NEW YORK, Oct. 1—There is little likelihood that in the last quarter of the year, upon which the industry is now entering, operations at automobile producing plants will be carried on at the pace of the preceding three months. The output in November is expected to be somewhat less than in October with a decline of equal proportions in December.

In the fourth quarter of 1922, output of cars and trucks aggregated 701,817 as against 726,045 in the third and it would not be surprising if the same ratio obtained this year, although the total output for the quarterly periods of this year will be much higher.

Retail Business Active

Some of the major producers, following their customary course, already have announced their intentions to curtail operations during this period. While sales have dropped from previous high levels, the tapering off has not been unusual or in any way alarming, retail business, in fact, keeping exceptionally active. It is realized, however, that fewer cars will be sold in the fourth quarter than in the third and producers, as a result, will delay stocking dealers for spring trade until next year.

Dealers, generally, appear to be well supplied with automobiles of all types and, except in a few cases, are in a position to satisfy current demand. Few complaints of slow deliveries are being received, or inability to meet customer requirements.

Truck business is improving somewhat, figures for August, which are the last definite available, showing a slight gain over the July total when there was a very pronounced drop from June.

Reports from the Milwaukee parts producing zone indicate capacity bookings in some plants as far ahead as March 1. Makers are being crowded with shipping directions for immediate delivery, this situation

(Continued on page 715)

Makers Draw Space for New York Show

Directors of N. A. C. C. Meet Previously and Reiterate Views on Taxation

NEW YORK, Oct. 4—The industry is here in full strength this week for the annual members' meeting of the National Automobile Chamber of Commerce, of which drawing for space in the national shows is the main feature. This drawing took place today at the Armory at 193d Street and Jerome Avenue instead of at N. A. C. C. headquarters, in order that the manufacturers might see for themselves just what a spacious building they have secured for the New York show in January.

Preceding the members' meeting, which was held today, the monthly meeting of the directors was held yesterday. The principal action of the directors was to reiterate their stand on the excise tax, which, they held, is a discriminatory tax and should be abolished.

Expect Hearing on Taxes

This year they figure the automobile industry alone will pay approximately \$150,000,000 in excise taxes. It is believed that going on record again at this time will give the industry a chance for a hearing when Congress convenes.

The directors also appropriated \$10,000 for the relief of the families of the four engineers who were killed in the explosion in the laboratory of the Bureau of Standards at Washington recently. A similar sum has been given by the American Petroleum Institute, and it is proposed to raise a big relief fund in recognition of the sacrifice.

It also was decided to hold a meeting of the advertising managers of the companies which hold membership in the Chamber some time in November.

Reports received by the directors from retail organizations indicate an active demand for motor buses, especially in the larger cities of the South. Private operators are the biggest buyers, but trolley companies, school departments and department stores also are large customers. Motor truck sales in general compare favorably with previous months. Motor car sales are spotty, with activity in the closed car market tending to minimize customary slackening at this period.

Provision for Taxicabs

At the drawing for show space this afternoon space was awarded to sixty-six passenger car makers. Six makers of taxicabs also drew space, this being the first time recognition has been given to this branch of the industry. Heretofore taxicabs have been classified as commercial vehicles, but under a recent decision of the show committee, they now are classed as passenger cars.

In this first drawing space was awarded to the following cars:

Dealers Who Have Not Proper Experience or Capital Cannot Be Expected to Succeed in Business

AN INTERVIEW WITH C. R. TALBOT,
Vice-President of the National Bank of Commerce of Detroit,
By D. M. McDonald,
Detroit News Representative of the Class Journal Co.

Detroit, Oct. 3.

TOO much haste on the part of manufacturers in establishing dealers in the average small city or town in the United States is blamed by C. R. Talbot, vice-president of the National Bank of Commerce of Detroit, for the inability of most small community dealers to make a success.

Whether the man has had the proper experience to make a success of selling automobiles, or whether he has the proper amount of capital to do business successfully, does not have an important enough part in the consideration. Without both he cannot hope to get along properly, and as his success or failure is bound up closely with the manufacturer, Mr. Talbot said it would be far better sales policy to go without any dealer until the right one was available.

The average small community dealer cannot get bank accommodations because of these reasons, Mr. Talbot said, as no banker who is on the ground will conscientiously participate in setting up a business which he knows has not a good chance of surviving. It is not a question of the bank protecting itself so much as it is a matter of attempting to protect the individual who, unknowingly, is risking his own small investment.

This condition is by no means confined to the small cities, Mr. Talbot said. He cited several instances of persons who had approached him upon the subject of going into business in Detroit. Each of these had far less capital than he thought the present competitive conditions would require, and he advised against it. Not because he thought the automobile business was not a good business but because he believed it a business which required a certain amount of capital if any hope of success were to be entertained. He mentioned \$25,000 as about the smallest amount of capital which he thought should be in hand.

The day for getting into the automobile business on a "shoe-string" and making it go, has gone by, Mr. Talbot said, except perhaps in rare and widely scattered cases. Only a man of exceedingly wide experience in the automobile business could expect to do it, and men with such experience are not in the "shoe-string" class. Used cars alone present a problem for the most experienced, said Mr. Talbot, and used cars are far from being the only problem which an automobile merchandiser must understand.

Bankers of the country know the value of the automobile in promoting business and increasing land valuations and for that reason are favorably inclined toward it, Mr. Talbot declared. No difficulty is experienced in getting credit by those entitled to it. Sound dealers making sound sales find the banker ready to do business, but it must be remembered, he said, that in the smaller communities the bankers, knowing more intimately the circumstances surrounding the sale, exercise a greater degree of censorship.

There are too many lines of cars for all to have sound individual representation in the smaller communities, Mr. Talbot stated. This will all correct itself in the course of time, he said, but naturally bankers must maintain an aloofness in keeping with the situation. Manufacturers seeking a widely extended sales organization without proper regard to its financial strength and business ability must suffer in competition with the manufacturer who concentrates his effort upon locating a sound distribution group even if of limited number.

Anderson, Apperson, Auburn, Buick, Cadillac, Case, Chalmers, Chandler, Chevrolet, Cleveland, Cole, Collins, Columbia, Davis, Dodge, Dort, du Pont (New York only); Durant, Elcar, Essex, Flint, Franklin, Gardner, Gray, H.C.S., Haynes, Hudson, Hupmobile, Jordan, Jewett, Kissel, La Fayette, Lexington, Liberty, Lincoln and Locomobile.

McFarlan, Maxwell, Moon, Nash, National, Marmon, Oakland, Oldsmobile, Overland, Packard, Paige, Peerless, Pierce-Arrow, Pilot (Chicago only); Premier, Princeton, R. & V, Reo, Rickenbacker, Roamer, Star, Stearns, Stephens, Studebaker, Stutz, Templar, Velle, Westcott, Wills Ste. Claire, Willys-Knight.

Taxicabs: R & L Reo, Roamer, Willys-Knight, Yellow and Checker Cab.

Carlisle Stockholders to Make Investigation

NEW YORK, Oct. 4—The Carlisle stockholders' prospective committee, of which William Fischer is chairman, which was appointed at a recent meeting of stockholders of the bankrupt Carlisle Tire Corp., has retained counsel and announces its intention to conduct an investigation into the company's affairs to learn what became of the \$2,000,000 subscribed by the stockholders.

It is hoped to recover some of the money for the stockholders. William Fischer is chairman of the committee.

Temporary Receiver Appointed for Vim

Company Is Solvent but Lacks Working Capital—Consents to Appointment

PHILADELPHIA, Oct. 3.—The Vim Motor Truck Co. has been placed in the hands of a temporary receiver by Judge Charles L. McKeehan of the United States District Court. Kern Dodge, as temporary receiver, will conduct the business in the interest of creditors and stockholders for thirty days. Leave has been granted to move for a permanent receiver on ten days' notice to all parties. The bond is \$25,000.

The company is solvent, its liabilities on Aug. 31 being \$1,301,277, exclusive of capital stock liability and its assets were \$2,468,081, but it lacks working capital and overdue accounts have become pressing, according to a bill in equity filed by A. V. W. Surre of New York, a creditor, to the extent of \$5,000.

Receivership Agreed To

The company, of which Merritt H. Adams is president, consented to the temporary receivership. The company's outstanding capital stock is \$650,000, of which \$150,000 is preferred and \$500,000 common.

According to the bill in equity, on or about April 30 last certain creditors whose claims aggregated \$273,314 agreed to accept the company's notes, payable three months after date, with 6 per cent interest, renewable at the company's option for a further period of three months.

The notes were secured by mortgage and deed of trust executed by the company to the Central Trust & Savings Co., Philadelphia, covering its land and buildings, the mortgage being subordinate to certain mortgages, previously executed, totaling \$875,000.

Since making the agreement with its creditors, the bill states, the company has endeavored to carry on its business of manufacturing and selling motor trucks with a view to liquidating its assets and meeting its liabilities. However, since July 1, 1923, it has been unable to meet certain matured promissory notes and other obligations and has on hand no quick assets convertible into cash to meet these obligations.

Company's Chief Assets

Its principal assets consist of real estate and equipment with stock and material purchased to manufacture trucks not yet assembled into salable form.

In addition, the bill continues, the company, owing to lack of ready resources, has been obliged to default in its payment of interest which fell due on Aug. 1, 1923, on the first mortgage of \$480,000 against its real estate and buildings and as a result, proceedings have been begun for foreclosure of the second mortgage of \$380,000 against the property.

The complainant adds that there is great and immediate danger that the

BODY MAKERS BACKING STUDY OF SAP STAINS

MILWAUKEE, Oct. 1.—Scientific study of sap stain in gum wood and interior dote in elm lumber will be undertaken at once by the Forest Products Laboratory operated by the Government at the University of Wisconsin in Madison.

The entire cost of the work will be borne by the body manufacturers of the country, with a view of improving stock suitable for the construction of motor car bodies.

Body makers are cooperating with the inspection rules committee of the National Hardwood Lumber Association in the work.

company's assets and property will be attached and levied upon by its various creditors and because it cannot convert its assets into cash, and unless these assets are conserved for the benefit of its creditors and stockholders, they will be subjected to damage and injury.

"If the business can be kept going," says the bill, "by a receiver appointed by the court, and the assets liquidated, it is probable that a sufficient sum can be realized in this way, or through the reorganization of the business, to pay all creditors in full and preserve the business as a going concern."

Referee Hears Claims of Leonard Creditors

JOLIET, ILL., Oct. 3.—Creditors are holding a series of meetings in the office of O. R. Laraway, referee in bankruptcy, to locate assets of the Leonard Tractor Co. Companies financing the organization presented claims amounting to \$125,000 which John Hurlbut, secretary and treasurer, asserts should not be allowed.

H. W. Talcott, a member of one of the financing companies, declared that President H. M. Leonard agreed to turn over 3000 shares of stock for money which the Leonard Sales Co. and the Capital Financing Co. had advanced to the firm. He stated that he and Wilbur Wynant had paid personally \$35,000.

E. G. Sroat, Hammond, Ind., presented a claim of \$18,000 on a mortgage held by the First National Bank of that place against the tractor company's land at Griffith, Ind. James J. Johnson, production manager and designing engineer, filed a claim for \$3000 to cover back wages.

An audit produced at the hearing represented that H. M. Leonard and John Hurlbut, officers of the company, drew out \$20,708 in salaries for a period of two years and three months, while they were alleged to have drawn approximately \$8,000 in addition for traveling expenses. It is planned to petition the court for the appointment of a trustee to take charge of the company's affairs temporarily.

Western Drop Forge May Be Reorganized

Receiver for Dollings of Indiana Believes Loss Would Result from Sale

INDIANAPOLIS, Sept. 29.—Bert McBride, receiver for the R. L. Dollings Co. of Indiana and subsidiaries, one of which is the Western Drop Forge Co. of Marion, Ind., has suggested to Philip Matter, receiver for the forge company, that a reorganization of the latter company might be a better solution of the difficulty than the court sale announced by Matter for Oct. 22.

McBride points out that the Western Drop Forge Co. can be operated at a profit from the fact that its bills payable of \$112,000 are more than offset by accounts receivable, and that its largest creditor is the International Note Co., the financing company of the Dollings concern, with a claim amounting to \$276,000.

It was further pointed out by McBride that a receiver's sale would result in the preferred stockholders obtaining practically nothing, and that other legitimate creditor interests would be menaced if they did not suffer great losses. It is not known what effect McBride's appeal for a reorganization instead of the court sale that has been ordered will have on the proposed sale but many concerned in Dollings' affairs hope the sale may be postponed.

Would Free Commercial Truck

PHILADELPHIA, Sept. 29.—On behalf of Thomas Raeburn White, receiver for the R. L. Dollings Co., Percival H. Granger, his counsel, has presented for approval of the court a plan to free from Dollings control, the Commercial Truck Co., a subsidiary firm.

Granger said that, as result of the Dollings connection, the truck company was unable to obtain credit and that, unless it were freed from Dollings control, there was likelihood of the company being forced into bankruptcy.

The plan, which was opposed by Joseph N. Ewing, attorney for the petitioners, provides for the Dollings company's surrender of its holdings of 50 per cent of the common stock of the Commercial Truck Co., the cancellation of various claims and counterclaims, the taking over by the Dollings Co. of twelve acres of ground at Second and Luzerne Streets now held in the name of E. R. Whitney, president, and Frank Whitney, treasurer of the Commercial Truck Co., and the payment to the Dollings company of certain cash sums.

Under the plan the Dollings company, it is expected, would receive \$340,000.

Judge Dickinson earlier refused to grant the plea by stockholders of the R. L. Dollings Co. that the receivership now in control of the corporation be terminated.

Finance Subsidiary Organized by Durant

2,000,000 Shares of Stock to Be Sold at \$15 Share—New Star Model Coming

NEW YORK, Oct. 1—Organization of the Durant Motors Acceptance Corp. as a subsidiary of Durant Motors, Inc., is announced, the new company having been incorporated in Delaware last Friday.

The new organization is different from others of the kind in that the parent company will not finance it. Instead, 2,000,000 shares of stock will be placed on the market at \$15 a share. When these shares have been disposed of, which is expected to be within two or three months, the acceptance corporation will be ready to operate.

William C. Durant is president of the subsidiary, with Carroll Downs, head of the Star company, as vice-president and W. W. Murphy, secretary and treasurer. Directors include Fred W. Warner, C. F. Daly and Richard Wightman.

Two plans for the operation of the company are offered. In the first, known as the warehouse plan, the company will finance distributors and dealers in storing cars during the winter, thus insuring prompt deliveries in the spring. The sale of cars on the credit plan is the other function. Under the customer's plan cars will be sold on small initial payments, the balance to be paid in installments spread over a number of months, secured by notes, bonds and insurance.

Change in Bank Presidency

This is not all of Durant's latest activities. His new bank, the Liberty Bank in New York, has been informally opened at 250 West Fifty-seventh Street. Prior to the opening William Crohnhart, temporarily president, resigned the office, which has been filled by the election of Carroll F. Downs, who figures prominently in nearly all of the Durant promotions.

It is also admitted that there will be a new Star model soon, which explains the virtual shutdown of Durant's Canadian plants at Leaside, which will mark time until Oct. 20. Other Durant plants, however, are still in production, but the Canadians were so well cleaned up on 1923 models that a let down was possible. The Leaside plant has turned out nearly 10,000 cars in its fiscal year.

SHOCK ABSORBER MERGER

ROCKFORD, ILL., Oct. 3—The Burd High Compression Piston Ring Co. has purchased the Gillman-Davis Shock Absorber Co. of Michigan City, Ind., of which Ora P. Hand is president, and will move the plant to Rockford, where the product will be manufactured in con-

BUSINESS OF M. A. M. A. MEMBERS IN AUGUST SHOWS INCREASE OF 3.5 PER CENT

NEW YORK, Oct. 1—Reports from members of the Motor and Accessory Manufacturers Association show that sales in August increased 3.5 per cent over July. Total sales amounted to \$50,264,100, representing a gain over July.

The following table shows the sales by members of the Association, the total past due accounts and notes held for all of 1922 and the first eight months of 1923:

1922	Total Sales	Per Cent Change	Total Past Due	Per Cent Change	Total Notes Outstanding	Per Cent Change
January	\$17,320,000	20.61 Inc.	\$4,450,000	5.45 Inc.	\$3,146,000	7.02 Dec.
February	22,720,000	31.17 Inc.	4,070,000	8.57 Dec.	3,483,000	10.74 Inc.
March	28,670,000	26.14 Inc.	2,890,000	28.86 Dec.	2,657,000	23.69 Dec.
April	33,830,000	18.70 Inc.	3,000,000	2.00 Inc.	2,500,000	1.05 Dec.
May	43,700,000	28.06 Inc.	2,900,000	2.75 Dec.	2,450,000	6.05 Dec.
June	42,000,000	3.85 Dec.	2,840,000	1.25 Dec.	2,320,000	5.00 Dec.
July	41,001,670	2.42 Dec.	3,423,850	20.42 Inc.	2,217,670	4.49 Dec.
August	43,700,000	5.00 Inc.	3,705,000	8.21 Inc.	2,398,350	8.15 Inc.
September	37,300,050	13.36 Dec.	4,220,400	13.91 Inc.	2,658,800	10.86 Inc.
October	39,753,800	3.90 Inc.	3,463,850	17.93 Dec.	2,603,100	2.09 Dec.
November	36,616,850	5.51 Dec.	4,245,850	22.58 Inc.	2,442,700	6.15 Dec.
December	34,711,630	5.20 Dec.	3,494,850	17.69 Dec.	1,905,650	21.98 Dec.
1923						
January	45,451,950	30.94 Inc.	2,469,950	29.33 Dec.	1,945,850	2.11 Inc.
February	48,518,700	6.75 Inc.	2,741,100	10.82 Inc.	1,981,950	1.86 Inc.
March	59,428,800	22.49 Inc.	2,129,350	22.32 Dec.	1,929,300	2.66 Dec.
April	61,647,050	4.00 Inc.	2,313,150	8.05 Inc.	1,839,350	5.00 Dec.
May	58,409,550	5.25 Dec.	1,982,750	14.28 Dec.	1,140,150	38.00 Dec.
June	58,067,500	.059 Dec.	2,191,150	10.55 Inc.	1,140,150	2.47 Inc.
July	48,536,700	16.4 Dec.	2,313,400	5.6 Inc.	1,424,450	28.1 Inc.
August	50,264,100	3.5 Inc.	2,382,370	7.00 Inc.	1,424,450	20.00 Dec.

junction with that of the purchasing company. The shock absorber will be produced under a new name, that of the Burd-Gillman, indicating the combined companies.

Stockholders Formulating Plan for Stevens-Duryea

NORTHAMPTON, MASS., Sept. 29—At a continued hearing in Superior Court here today on a receivers' petition to sell the Stevens-Duryea plant to a group headed by R. M. Owen of New York for \$450,000, Judge Richard W. Irwin announced that a telegram had been received from a Philadelphia law firm saying that a stockholders' committee had been appointed to formulate a plan to reorganize the concern and operate the plant.

He said he thought that any proposed sale should be delayed until this committee had had time to submit a report embodying its proposals. The hearing was thereupon continued until Oct. 6.

Nash to Build New Unit to Works in Milwaukee

MILWAUKEE, Oct. 2—Contracts have been let by the Nash Motors Co., Kenosha, Wis., for another unit of its four-cylinder passenger car works at Milwaukee. This will be known as a loading building and is 200 x 600 ft.

It will be finished about Dec. 1 and will reduce materially the time, labor and expense in making ready and shipping Nash cars out of the Milwaukee plant. Work is being completed on a large brick and steel building of liberal dimensions, known as a hospital, where final inspections, tests and adjustments are made before cars are shipped.

French Body System Adopted by British

PARIS, Sept. 22 (By mail).—Adoption of the Weymann system of light weight sedan body construction is announced by the Daimler, Sunbeam, Talbot, Singer and Triumph companies of England, in addition to the Rover Co., which was the first to take up this French novelty.

There is an impression that the first of the wood and fabric leather bodies built by these companies will be ready for the London show. The Triumph has placed orders with the parent concern in France for a regular delivery of bodies; the Daimler company designed and built its first sample bodies in the Weymann works at Paris and is now ready to go into production in its own factory.

The Boulogne Body Co. of Boulogne near Paris has taken out a license for this type of body, and two high-grade Paris body builders are said to be negotiating for licenses.

On the latest bodies the Weymann company has abolished the imitation cane work finish for special grained fabric leather. The latest style of body is described as a "false cabriolet," being one which has all the appearance of a cabriolet, but will not open.

CONTINENTAL BUYS LAND

MUSKEGON, MICH., Oct. 1—The Continental Motors Corp. has bought 600 front feet of water frontage east of its present plant on Muskegon Lake. The land obtained constitutes about five acres and includes the docks of the Michigan Materials Co. and property owned by Charles Voet. It has 500 ft. frontage on Western Avenue.

Sloan Is Satisfied With Sales Outlook

Expects General Motors to Continue Operation on Good Production Basis

NEW YORK, Oct. 3—As indicating the General Motors viewpoint on the outlook for the balance of the year, President A. P. Sloan, Jr., in a statement made public today, declares that the corporation expects to run through the fall and winter on a very good production basis, and that he is entirely satisfied with the present outlook.

The October production schedule calls for 91,000 cars, which will make it a record month.

In his statement Sloan says:

We scheduled for September 82,000 cars. This compares with 75,000 cars in May, 1923, the largest number that General Motors ever produced and sold in any one month. Due to the fact that September was a short month in working days and on account of production difficulties in bringing through new models, we fell considerably short of this schedule; but we sold 69,400 which was every car we could make; and we closed the month with a substantial amount of orders unfilled.

We have scheduled for October 91,000 cars and shall make every effort to produce that number. We have no question of our ability to market them. Sept. 1, which is the latest available date on which we have reports from our dealer organization throughout the country, showed a smaller number of unsold cars on hand than we had the corresponding period last year.

On Oct. 1, General Motors had on hand the smallest number of cars in our possession in any month during the past year.

Activities of Car Units

Our Buick division is manufacturing from 900 to 1000 cars per day and is moving into the hands of the consumers every car it can possibly produce. Our Chevrolet division, for the month of October, is expected to produce 2200 cars per day, the largest business in its history.

Cadillac is getting into its new model and is already making over 100 cars a day. Oakland is doing exceptionally well. We have just announced our new Olds six-cylinder car which completes the General Motors line for the coming year. There is no question but that we shall be able to sell every Olds car we can make.

It always is dangerous to forecast the future, but the way it looks now we fully expect to run through the fall and winter on a very good production basis. To sum up the situation, we are entirely satisfied with the present outlook.

Output for September

NEW YORK, Oct. 3—General Motors Corp. reports 69,400 sales for its automobile units in September. Revised figures for August show 66,019 for that month instead of the 65,000 previously estimated.

As reported, the combined sales of the units for the nine months of 1923 is as follows:

	1923	1922
January	49,162	16,088
February	55,458	20,869

TAX FROM INDUSTRY DROPPED IN AUGUST

WASHINGTON, Oct. 3—Collections of the manufacturers' excise tax on automotive products for August, 1923, amounted to \$8,995,044, a decrease of \$4,582,962, as compared with August of last year.

The receipts from July 1, 1923, to Aug. 31, 1923, on such products amounted to \$27,121,361, an increase of \$6,175,870 as compared with the similar period for 1922.

These taxes when segregated show that the collections on automobiles and trucks in August, 1923, amounted to \$700,516; other automobiles and motorcycles, \$5,134,582, and automobile accessories and parts, \$3,159,944. In each instance the collections are below those of August, 1922.

March	71,698	23,082
April	75,854	40,074
May	75,420	46,736
June	69,708	48,541
July	51,657	33,772
August	66,019	42,840
September	*69,400	35,443
October		40,815
November		50,232
December		46,871

*This preliminary figure of sales includes Buick, Cadillac, Chevrolet, Oakland, Oldsmobile passenger and commercial cars and GMC trucks.

Singer Maker Will Pay 12½ Per Cent Dividend

WASHINGTON, Oct. 2—Assistant Trade Commissioner Park of London, reporting to the Department of Commerce, called attention to the earnings of Singer & Co., Ltd.

The directors in their annual report, just issued, show a profit, after making the usual provisions for taxation and other charges, of £37,239, to which is added £35,925, brought forward, making an available total of £54,195.

It is recommended to pay a dividend of 12½ per cent, less tax, which will absorb £18,951; to general reserve £10,000, and to properties reserve £5,000.

The dividends for the last two years were 10 per cent, and the increase this year is paid without departing from the conservative policy of the board.

Price reductions on the 1924 models of Singer cars are also announced.

MOOMY MAKER BANKRUPT

PITTSBURGH, Oct. 2—The Keystone Rubber Manufacturing Co. of Erie, Pa., manufacturing the Moomy inner tube, has filed a voluntary petition in bankruptcy in the United States District Court, placing liabilities at \$258,212 and assets at \$138,504. This concern has no connection with the Keystone Tire & Rubber Co. of New York City, manufacturer of Keystone tires.

Taxes for 8 Months Totaled \$103,744,000

August Is Lowest Period in Year in Its Yield to Federal Government

WASHINGTON, Oct. 2—Automotive manufacturers paid the Federal Government \$103,744,000 in excise taxes on their products in the first eight months of 1923. These imposts covered sales to dealers of cars, trucks, motorcycles, parts and accessories. Purchasers of motor vehicles bear this discriminatory special tax. The excise returns by months have been:

January	\$11,774,000
February	10,073,000
March	12,182,000
April	9,727,000
May	16,798,000
June	16,069,000
July	18,126,000
August	8,995,000

The decline of 50 per cent in August receipts, as compared with those of July has not been explained. Collections are always on business at least one month old, and usually it covers sales two months back.

Taxes are payable as soon as manufacturers are paid for their goods. In the case of vehicle makers this means when they are shipped. It is reasonable to assume, however, that a part of the falling off may be explained by the fact that considerable quantities of goods were shipped to factory branches or were warehoused.

Aid from All Transportation

WHITE SULPHUR SPRINGS, VA., Oct. 1—Having gathered statistics at the request of the National Automobile Chamber of Commerce, John E. Walker, former tax adviser of the United States Treasury Department, told the delegates in attendance at the National Tax Association convention, held here last week, that transportation, automobile, steam and electric, paid more than 8 per cent of the total tax burden of the nation in 1921.

Of the grand total of \$8,950,000,000 collected, more than \$700,000,000 came from taxes levied against transportation, in addition to numerous special imposts of one kind or another, Walker declared.

In his report Walker said:

During the same period, about \$1,000,000,000 was devoted to the highway construction and maintenance program. Of this amount, detailed figures show that less than half was derived from current miscellaneous and general state taxation.

The remainder was drawn from bond issues which will be retired in many instances from motor fees; from special gasoline and other taxes imposed on the motor vehicle owner and from Federal appropriations which were more than offset by the Federal excise taxes imposed against the motor vehicle.

The result was that but 5.3 cents of the general tax payer's dollar in 1921 went to highways.

Men of the Industry and What They Are Doing

Grigsby Goes to Europe

B. J. Grigsby, president of the Grigsby-Grunow-Hinds Co., Chicago, manufacturer of automobile accessories, has sailed for a two months' business visit to England, France, Belgium and Holland.

Bonney Forge Appoints Tyrol

George W. Tyrol, formerly with J. H. Williams & Co., has joined the sales force of the Bonney Forge & Tool Works, Allentown, Pa., and will cover Pennsylvania, southern New York, New Jersey and Delaware.

Poyzer Succeeds Stuart

Glenn W. Poyzer, service engineer, has been promoted to the post of sales engineer in the home office of the Selden Truck Corp., to fill the vacancy caused by the resignation of Charles E. Stuart who has entered the tire field.

Lincoln Products Appoints Mayo

Frank Mayo, for many years president of the Mayo-Skinner Manufacturing Co., has been appointed vice-president in charge of sales of the Lincoln Products Co. of Chicago, manufacturer of Lincoln shock absorbers.

Change in Apperson Branch

George W. Lynn, formerly manager of the Standard Eight branch in Chicago, has succeeded Joseph F. Davis as manager of the Apperson interests in Chicago. H. F. Stott remains in charge of wholesale and retail sales at 2240 Michigan Avenue. Davis, who has been a prominent figure in the automobile business in Chicago for years and who was at one time president of the dealers' association, resigned to assume other duties.

Thien Joins MacManus

Robert R. Thien has joined MacManus, Inc., Detroit, advertising counsel, and will be associated with the Detroit office. He is widely known in the advertising agency field, his experience dating back over thirteen years, a large part of which was gained in New York. During that time he has been connected with the advertising and merchandising campaigns of companies such as Gillette Safety Razor, Remington Arms, Corn Products Refining and Fisk Rubber.

DANIELS SALE POSTPONED

READING, PA., Oct. 2—By permission of the United States District Court the sale of the plant of the Daniels Motor Co., scheduled for Thursday, has been postponed to Oct. 25.

BUYS TRUMBULL LAMP PLANT

WARREN, OHIO, Oct. 3—The Phillips Custom Body Co. of Cleveland has purchased the plant of the Trumbull Mazda

START RELIEF FUND FOR BLAST VICTIMS

WASHINGTON, Oct. 1—A fund for the benefit of the relatives of the victims of the explosion at the Bureau of Standards has been started by Secretary of Commerce Hoover with a contribution of \$1,000 and the American Petroleum Institute, which donated \$10,000. Announcement has been made by the National Automobile Chamber of Commerce and the Society of Automotive Engineers that they will add their contribution.

The fund is in recognition of the efforts of the four engineers killed toward increasing efficiency in automotive and aviation equipment.

The relief committee is composed of Dr. George K. Burgess, chairman; E. W. Libbey, secretary; Henry D. Hubbard, treasurer, and F. D. Brown. Contributions may be sent to the secretary of the committee or to Secretary Hoover.

Lamp Co. and has made plans to start operations within a month, employing more than 400 men. This company, of which Frank M. Phillips is president, recently purchased the Arcraft Top Co.

Ford Requests for Right to Control Its Coal Cars

WASHINGTON, Oct. 2—Contending that a decision of the Interstate Commerce Commission, recently rendered, is having "a widespread effect upon the price of Ford cars," the Ford Motor Co. has filed a petition with the commission asking for reconsideration of its July decision in the assigned car case.

The general result of the decision against which the company complains was to refuse to coal mines and utilities owning their own cars the right to control those cars in the shipment of fuel.

The Ford petition sets forth that factories owned by the Ford company used more than 3000 tons of coal a day, and that in addition to acquiring coal mines, the Ford interests also had purchased \$1,807,000 worth of steel coal cars.

FORD OUTPUT FOR WEEK

DETROIT, Oct. 3—Ford Motor Co. production for the week ending Oct. 2 places the total cars and trucks for domestic sale at 41,285. Tractor output for the week was 19,022. The Lincoln output of 168 is below the totals for recent weeks, due to changes in plant equipment.

Williams Is Elected to Head Wire Wheel

Succeeds John F. Alvord, Who Continues as Director—O. J. Rohde Also Resigns

BUFFALO, Oct. 1—John F. Alvord has retired from the presidency of the Wire Wheel Corp. of America. He remains a director of the company, but will devote his main energies to his personal interests, which include the Splitdorf Electrical Co. of Newark, N. J., of which he is president.

At the same time O. J. Rohde, retired as vice-president and general manager, to follow his chief in other lines, details of which have not been announced. Rohde will remain on the board of directors and executive committee of the Wire Wheel Corporation.

Succeeding Alvord as president of the Wire Wheel corporation is G. M. Williams, for the last five years general manager of the Dayton Wright Airplane Co. division of the General Motors Corp. He is an engineer by profession and at one time was chief engineer of the H. E. Talbot Co. of Dayton, Ohio, and a vice-president of the Dayton Metal Products Co.

In 1916 Williams became identified with the Dayton Wright Company. He is also a former president of the Manufacturers Aircraft Association and a governor of the Aeronautical Chamber of Commerce of America.

At the same meeting H. P. Ingles of New York was elected chairman of the board of directors.

Willys Succeeds Drake on N. A. C. C. Committee

NEW YORK, Oct. 3—John N. Willys, president of the Willys-Overland Co., has been appointed chairman of the foreign trade committee of the National Automobile Chamber of Commerce, succeeding J. Walter Drake of the Hupp Motor Car Corp., who resigned to become Assistant Secretary of the Department of Commerce at Washington.

President Clifton of the N. A. C. C. has taken several months to fill the vacancy, realizing that this is one of the most important committees of the Chamber. This is particularly true in view of the international motor transport convention which the N. A. C. C. will hold in Detroit next May, and which will come under the direct supervision of the foreign trade committee chairman.

The selection is regarded as the most logical that could have been made in view of Willys' intimate knowledge of export conditions.

One Japanese Order Calls for 100 Trucks

Placed Through Exporter in Seattle—Cars on City's Docks Awaiting Shipment

SEATTLE, Oct. 2.—Automobiles and motor trucks are as much necessities in devastated Japan as rice, flour, wheat, canned fish, bedding, tenting, clothing and other essentials, which went out on the first relief ships from here, and the Seattle automotive trades have been doing a rushing emergency business in the last ten days. One order alone called for 100 motor trucks, the largest single order ever given the trade here.

The order was handled locally by the Mitsubishi Shoji Kaisha, Limited, Seattle, offices in the Central Building.

Practically all the trucks were one and two-ton type for reconstruction work in Yokohama. The trucks went forward with foodstuffs and other emergency equipment. Four days after the cablegram came 41 of the trucks were on the S. S. President Jefferson and two days later 50 more were in the holds of the Africa Maru. But the order practically cleaned out the truck men here as they have been doing a fine business due to the healthy condition of the logging and lumber industry, particularly.

Japan is to be the market for a large quantity of automobiles and at the present time there are more than 100 cars on the trans-Pacific docks here destined for Yokohama and Tokio. Travelers returning from these devastated cities report that practically every automobile in Yokohama was destroyed and the same is nearly as true of Tokio.

Japan has been a good customer for American automobiles and as the Japanese government plans to finance rapid reconstruction of the devastated area and places much reliance on the truck and the automobile to facilitate this work the dealers here believe that American manufacturers will get substantial orders from the Orient in the immediate future.

"Truck Master" Chosen as Driver Designation

PONTIAC, MICH., Oct. 1—"Truck master," coined by L. R. Fisher of Rochester, N. Y., is the winning title in the national contest conducted by the General Motors Truck Co. for the best suggestion for a new name for a motor truck driver.

The contest was started several months ago as the result of a suggestion by Motor Transport, published by the Class Journal Co., which asserted that the drivers of a locomotive, a street car or an automobile all had a separate classification and the motor truck driver should have some designation.

Executives of the General Motors Truck Co. feel that the term truck mas-

DEALERS SUFFERED IN JAPANESE QUAKE

WASHINGTON, Oct. 3—Cablegrams received by M. H. Hoepli, chief of the automotive division, Department of Commerce, show that ten automobile dealers' establishments in Japan were destroyed by the earthquake. It is believed that other establishments were also destroyed.

According to the cablegram Japanese dealers expect a large immediate demand for trucks and low priced passenger cars. Hundreds of automobiles were destroyed in the collapse of Tokio and Yokohama. As the need for motor vehicles is urgent, import duties have been modified.

ter expresses the position of the operator of a motor truck much more clearly than that simply of driver. In nearly every instance, they say, the driver of a motor truck is in charge of that vehicle and he has one or more assistants working for him.

Fisher, in his letter, urges that the title truck master be given only to the man actually in charge of a motor truck; all others would be required to work up to the position of master.

Norma Places Contract for Connecticut Plant

LONG ISLAND CITY, N. Y.—Oct. 3—Norma Co. of America has placed contracts for the erection of the first unit of its new plant upon its property recently acquired at Stamford, Conn. The site consists of seventeen acres adjacent to the New York, New Haven & Hartford Railroad tracks and the building to be constructed will be one-story sawtooth roof type, occupying about 60,000 sq. ft. of space.

The company's present plant in Long Island City will be continued for the production of Norma precision open type annular ball bearings.

At Stamford the company will manufacture Hoffmann precision roller bearings as well as all other Hoffmann products, the American rights to which were recently secured from the Hoffmann Manufacturing Co. of England. The Stamford plant also will be equipped for the expansion of the manufacture of Norma bearings.

FORD PLANT AT SALT LAKE

SALT LAKE CITY, UTAH, Oct. 3—The contract for the plant here of the Ford Motor Co. has been awarded, the cost of the proposed structure being approximately \$250,000. Original plans have been changed to permit of a second story to the factory. T. L. Mackay, formerly assistant manager of the Denver branch, has succeeded H. H. Young as manager in Salt Lake City.

City, When Buying, Must Bear War Tax

New York Supreme Court Bases Opinion on Ruling of U. S. Attorney General

NEW YORK, Oct. 1.—The Packard Motor Car Co. of New York has won an important suit against the City of New York involving the collection of excise taxes which will serve as a precedent for others in the automotive industry and save thousands of dollars.

The decision was rendered by Judge Edward G. Whitaker of the Supreme Court who ruled that the City of New York cannot legally deduct the war tax from the contract price of merchandise purchased from any manufacturer. The suit followed the sale of four Packard trucks to the city, which deducted the war tax from the check given in payment. The Packard company refused to accept the check unless the tax was included and carried the matter into the courts.

The suit was based on the fact that since 1919, when the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, ruled that "articles sold to a State or political subdivision thereof by the manufacturer for use in carrying on its government operations are not subject to the tax," the City of New York, as well as other municipalities throughout the United States, has been deducting the war tax from the contract price of merchandise purchased.

The Commissioner also ruled that "articles sold by the manufacturer to a State, county or municipal institution are also exempt from tax when paid for entirely out of public money."

First Ruling Invalidated

Almost immediately after this ruling was made it was invalidated by the Attorney General of the United States but the repeal of the ruling evidently did not receive the attention that the original ruling did because cities continued to deduct the tax from contract price. This did not prevent the Government, however, from collecting the tax from the manufacturer, with the result that manufacturers of all commodities lost hundreds of thousands of dollars.

It is pointed out by the Packard company that manufacturers in many sections of the country made the mistake of accepting in payment of the money due them the entire amount less the war tax. When they attempted to collect this additional sum they were unsuccessful.

PLANS TO MAKE MEELEY TIRES

PHILADELPHIA, Oct. 3—George G. Meeley has organized the Meeley Tire & Rubber Co. in Garfield, N. J., having purchased the Armstrong Rubber Co. plant there. He plans to produce 2500 Meeley tires daily in a short time.

New Ford Price Cut Runs from \$3 to \$40

**Phaeton Now Lists at \$295—Ton
Truck Lowered \$10 and
Tractor Increased \$25**

DETROIT, Oct. 1—Reductions of \$40 in the price of the four-door sedan and further decreases ranging from \$3 to \$40 covering its entire passenger car line and the 1-ton truck were announced today by the Ford Motor Co.

The old and new prices, together with the reductions are as follows:

	Old	New	Reduc-
	Price	Price	tion
Chassis	\$235	\$230	\$5
Roadster (without starter and demountable rims)	269	265	4
Roadster (with starter and demountable rims)	364	350	14
Phaeton (without starter and demountable rims)	298	295	3
Phaeton (with starter and demountable rims)	393	380	13
Coupe	530	525	5
Sedan	725	685	40
Truck (1-ton)	380	370	10

The price of the Fordson tractor is increased \$25, the new price being \$420.

Lincoln Prices Unchanged

There is no change in the prices of the Lincoln cars and none is contemplated, is the statement made by the company in connection with the price changes.

Conservativeness of the Ford reductions and the prominence given them in the press of the country are looked upon by industry executives here as emphasizing the generally close margin upon which automobiles are being built and as such having a stabilizing influence at a time when conditions have been somewhat upset by frequent new models and price changes.

It is generally conceded that the price changes were not required as a stimulus to Ford business, but were part of the company's policy of fixing its prices each year following its fiscal period on the basis of anticipated business in the new year. Ford's schedules are considerably in advance of those of a year ago and undoubtedly will be increased possibly to 10,000 daily should business warrant with the completion of new manufacturing and assembly projects at various points.

Will Settle Conjectures

The announcement that no changes are contemplated in the Lincoln line, however, is regarded here as the most noteworthy feature of the statement as the trade in many parts of the country has been upset by reports of possible deep slashes in present Lincoln prices. This has had a retarding influence on other lines in that price class and to some extent affected sales of Lincoln though the factory has been consistently sold out on Lincoln since Ford bought it.

PRICES TODAY, ON THE AVERAGE, ARE 3 PER CENT LOWER THAN THEY WERE ON JANUARY 1

NEW YORK, Oct. 1—An analysis of price lists since the first of the year, following the Ford drop announced today, shows that on the average prices are 3 per cent lower than on Jan. 1. Inasmuch as twenty-five companies have increased their lists in that time and the same number lowered them, there would seem to be a difference of opinion among automobile manufacturers, proving that no price war is waging at the present time.

Looking into the figures further, one finds that sixteen of the increases came in the first six months of the year, while in the last three months seventeen companies out of twenty-five have dropped prices.

The following tables show the price increases and decreases since Jan. 1:

REDUCTIONS

Make and Model	Date	Touring Price			Sedan Price		
		Old	New	Decrease	Old	New	Decrease
Apperson, 8	9/17	\$2,800	\$2,485	\$315	\$3,750	\$3,385	\$365
Auburn, 6-43	8/1	1,165	1,095	70	1,535	1,495	40
Auburn, 6-63	8/1	1,725	1,595	130			
Chalmers	8/29	1,235	1,185	50	2,195	2,095	100
Chevrolet, Superior	9/4	525	495	30	860	795	65
Davis, 71	4/30	...	...	...	1,795	1,595	200
Dort, 23-18	3/23	...	...	...	1,370	1,350	20
Dort, 25-20	3/23	...	...	...	1,495	1,465	30
Duesenberg, 8	10/1	6,250	5,500	750	7,800	7,500	300
Ford, T	10/1	393	380	13	725	685	40
Fox, 7F	6/23	3,900	2,975	925	4,900	3,975	925
Hanson, 66	4/16	1,595	1,395	200	2,585	2,195	390
Haynes, 77	6/20	2,395	1,995	400	3,395	2,995	400
Haynes, 60	6/20	1,595	1,295	300	2,595	2,295	300
Hudson	6/22	1,475	1,425	50	2,095	1,995	100
	9/19	1,425	1,350	75	1,995	1,895	100
Hupmobile, R	9/24	1,165	1,125	40	...	...	...
Jordan, MX	5/27	1,795	1,675	120	2,485	2,285	200
Marmon	9/24	3,185	2,785	400	4,385	3,985	400
Maxwell	3/28	925	885	40	...	...	...
	8/29	885	795	90	1,335	1,295	40
Oakland, 6-44	9/6	995	945	50	1,545	1,395	150
Overland, 91	9/1	525	495	30	860	795	65
Peerless, 23	9/4	2,990	2,690	300	4,090	3,840	250
R & V Knight, H.	9/10	2,850	2,300	550	3,700	3,250	450
Reo	8/1	1,645	1,545	100	...	...	...
Willys-Knight	8/19	1,235	1,175	60	...	...	...

INCREASES

Make and Model	Date	Touring Price			Sedan Price		
		Old	New	Increase	Old	New	Increase
Anderson, 41	5/23	...	...	...	\$1,595	\$1,695	\$100
Auburn, 6-43	5/1	\$1,095	\$1,165	\$70	1,465	1,535	70
Auburn, 6-63	5/1	1,650	1,725	75	2,245	2,345	100
Buick, 34-9	8/2	885	965	80	1,395	1,495	100
Buick, 41-7	8/2	1,195	1,295	100	1,985	2,095	110
Buick, 48-55	8/2	1,435	1,565	130	2,195	2,285	90
Cadillac, 61	9/13	2,285	2,985	100	3,950	4,150	200
Chalmers	6/25	1,185	1,235	50	2,095	2,195	100
Chandler, Six	5/19	1,395	1,485	90	1,695	1,785	90
Cleveland, 42	3/30	995	995	...	1,285	1,295	10
	9/7	995	1,045	50	1,295	1,365	70
Cole, Master	6/6	1,885	2,175	290	2,685	3,075	390
Columbia, Light 6	3/28	...	...	...	1,395	1,465	70
	7/27	...	...	...	1,465	1,495	30
Courier	7/9	1,235	1,295	60	2,055	2,195	140
Crawford, 23-70	4/13	3,000	3,100	100	...	...	...
Crawford-Dagmar	4/13	...	...	...	4,250	4,500	250
Dorris, 6-80	7/2	...	...	...	5,750	5,800	50
Dort, 23-18	3/23	865	885	20			
Dort, 25-20	3/23	990	1,025	35			
Elcar, 4-40	6/21	965	995	30			
Gardner	4/10	965	995	30	1,365	1,445	80
Gray	3/26	490	520	30			
Hupmobile, R	4/19	1,115	1,165	50	1,675	1,750	75
Jewett	3/31	995	1,065	70	1,465	1,495	30
Kissel, 55	5/22	1,485	1,585	100			
Lafayette	7/1	4,090	5,000	910	5,500	6,500	1,000
Lexington	2/5	1,695	1,795	100	2,545	2,645	100
Standard, 99	3/7	2,395	2,500	105	3,200	3,400	200
Stephens	4/1	1,295	1,395	100	1,895	1,995	100
Studebaker, Light 6	7/3	975	995	20			
Studebaker, Spec. 6	7/3	1,275	1,350	75			

Since taking over Lincoln, Ford has persisted in its statement that the Lincoln car would never be made on a pro-

duction basis and that at all times better quality would be built into the car as
(Continued on next page)

Red Ball Transit Co. Starts Making Truck

Will Sell at \$2,200—Company Announces Plan to Build "Red Ball" Taxicab

INDIANAPOLIS, Oct. 2.—The Red Ball Transit Co. of this city, with a factory in Frankfort, Ind., has begun production of a 3-ton heavy-duty Red Ball truck with four-wheel brakes, to be made of standard parts and units and to sell at \$2,200 for the chassis.

President W. B. Hiner announced today that the company also will build Red Ball taxicabs soon to sell with body for \$2,200. These cabs will be sold exclusively to taxicab operating companies that will conduct business under the Red Ball name.

The truck chassis has a Waukesha engine, $4\frac{1}{2} \times 5\frac{1}{2}$, Wisconsin worm gear axle, Covert four-speed transmission, M. & E. single dry disk clutch, Ross steering gear and Continental heavy type front axle.

Transit Company Erects Own Body Building Plant

OAKLAND, CAL., Oct. 1.—The California Body Building Co. started construction of a plant here, Sept. 18, on a site 160 x 190 ft., at Market and Myrtle Streets. The company will manufacture bodies for the fleet of automobile stages it operates under the name of the California Transit Co.

The building is to have a floor space of one and one-half acres, with 43,750 sq. ft. on the first floor. W. E. Travis is president of the California Body Co., and also president and principal owner of the Transit company, which operates in all directions from Oakland into the interior of the State.

Special bodies for passenger and commercial cars also will be built to order by the company at its local plant. The new plant will employ 160 men, and represents an investment of \$250,000.

New Cut in Ford Prices Ranges from \$3 to \$40

(Continued from preceding page)

manufacturing economies made it possible. Despite this Lincoln policy the thought has persisted that the Lincoln would sell, factory, at less than \$3,000, when manufacturing plans were completed. With new buildings now nearly equipped it was thought that this price change was about to be made. Lincoln refinements are looked for rather than lower prices.

The tractor price increase is not surprising as it has been the opinion that there was little profit if any for the company at the former price. At the Ford offices it is declared that the increase in tractor prices is expected to

pass unnoticed, so far as any effect on sales is considered. Tractor business has been very good all year and will continue good, say executives, the price increase merely emphasizing the former and present values.

It is learned that dealer discounts will not be changed incidental to the price cut, the reductions being too close to alter the percentage of dealer earnings to an appreciable extent.

Duesenberg Increases Open and Closed Lists

INDIANAPOLIS, Oct. 1.—The Duesenberg Automobile & Motor Co. has announced an increase in the prices of the Duesenberg Eight, the advance ranging from \$750 on the open models to \$250 and \$300 on the closed. The phaeton now lists at \$6,250 and the sedan at \$7,800.

The following shows the revised schedule:

	Old Price	New Price
5-passenger phaeton....	\$5,500	\$6,250
4-pass. sport phaeton....	5,750	6,500
4-passenger coupe.....	7,250	7,500
Sedan	7,500	7,800

New 5-Passenger Sedan Brought Out by Haynes

KOKOMO, IND., Oct. 2.—A new model, a five-passenger sedan selling at \$1,895, has been announced by the Haynes Automobile Co. The seats of this new Haynes 60 are upholstered in mohair and a car heater, roof ventilator and adjustable windshield are fitted. Additional body fixtures include a dome light, smoking and vanity cases, a robe cord and clock mounted on the instrument board.

The sedan is finished in Burgundy wine color with fine gold hair-line striping. The radiator is nickel-plated and searchlight design headlamps and exterior side cowl lights are mounted. A sun and vision visor and disk wheels with $32 \times 4\frac{1}{2}$ in. cord tires are standard equipment.

Car Engine Features in New Leyland Truck

LONDON, Sept. 22 (by mail)—The Leyland Motor Co., one of the biggest producers of trucks in England, besides being the manufacturer of the Leyland straight-eight-engined passenger car, will show a new $1\frac{1}{2}$ -ton pneumatic-tired truck chassis at the Olympia.

The $3\frac{1}{2} \times 5\frac{1}{2}$ in. four-cylinder engine of this new model embodies features that were introduced in the passenger car, notably an overhead camshaft operated by triple-throw eccentrics and connecting rods. Each cam and valve spring actuates two valves, the springs being of the laminated plate type, their ends engaging with T pieces screwed into the valve stems.

Full details of the design are not yet available, but it is said that remarkable power curves have been obtained. The chassis will probably be submitted to the War Department for inspection.

Gramm Plan Offered for Reorganization

If Approved, Court Will Be Asked to Authorize Same to New Corporation

TOLEDO, Oct. 1.—The creditors' committee of the Gramm-Bernstein Truck Co., now in receivership, with E. G. Kirby as receiver, has submitted to all the creditors a plan of reorganization with the statement that, if approved by the creditors, the Federal Court will be asked to authorize sale of the company to a new corporation.

The new company would be capitalized as follows: \$500,000 of 8 per cent prior preference management stock; \$2,000,000 of 7 per cent preferred stock; 12,500 shares of no par value common stock. Working capital for the new corporation would be provided by sale of \$300,000 of the management stock at not more than \$90 a share to the capitalists who have agreed to back the enterprise.

This stock would have complete control of management of the company, but provision is made for retirement of the management stock by holders of the preferred stock. The preferred stock would be issued to creditors, dollar for dollar for their claims, which they are asked to agree to assign to the creditors' committee. These assigned claims, under the plan outlined, would be used for the purchase of the company.

The creditors' committee, in a letter accompanying the plan, states that the only alternative to the plan "is liquidation under the hammer, which, in the committee's opinion, is the least desirable, with the possibility of a return to the creditors of only about 10 per cent."

Moon Preparing to Add New "Six" Under \$1,000

ST. LOUIS, Oct. 5.—The Moon Motor Car Co. is preparing to add to its line a new light six-cylinder car to sell for less than \$1,000, according to President Stewart McDonald. The present model lists at \$1,295.

The company is now closing large contracts for material for the production of the new model.

This will put a Moon car for the first time under \$1,000, and with this addition to its regular line of cars, as well as the available field for cars of this price, the company plans to produce 25,000 cars in 1924 as between 12,500 and 15,000 for the current year.

Sales value of Moon cars in the first eight months of this year aggregated \$7,272,260.

OVERLAND TO INCREASE

TOLEDO, Oct. 1.—Production plans of the Willys-Overland Co. call for a daily output of Model 4 of 515 starting today, an increase of 150 over the previous three weeks.

State Supreme Court Will Review Tax Law

Counsel of Wisconsin Transport
Association Charges Fee
Statute Is Unfair

MILWAUKEE, Oct. 3.—The Wisconsin Supreme Court has granted the motion of the Motor Transport Association of Wisconsin to commence an original action testing the validity of the weight tax law enacted by the legislature of 1923. This action will bring a test case directly before the highest court immediately. Arguments will be heard during the coming two weeks and a decision rendered about a fortnight thereafter.

Ralph M. Hoyt, former deputy general and counsel for the transport association, set forth two causes of action. He attacked the new law on the ground that it established an unlawful discrimination between owners of cars of different types in that motor trucks were required to be re-licensed on a weight basis on July 1, this year, while passenger registrations for 1923 are not disturbed and the new law is effective in their regard on Jan. 1, 1924.

The second attack is on the ground that the law imposes an invalid condition in requiring truck owners to re-register and pay increased fees for part of a period for which they already have been licensed.

The Attorney-General joined with the petitioner in asking early consideration of the questions involved, which are causing serious inconveniences in the motor registry division of the Secretary of State's office in setting up the machinery and materials for enforcing the new law.

Makers Will Lighten Output This Quarter

(Continued from page 706)

Indicating the general activity throughout the industry and the tendency of car and truck manufacturers not to suffer any decided let-up in operations.

The first of the closed car shows to be held in the larger cities opened in New York on Saturday and doubtless will prove to be a great factor in keeping sales in the metropolis up to a healthy average. The buying public was given the first opportunity to see new models of cars or refinements in the old in a way that permitted comparison of details.

From now on shows will be staged at intervals in all the larger cities, throughout the country, with the biggest events in the show calendar coming in January and February. In those months the national exhibits

will be held in New York and Chicago.

Shows that have been held in rural communities so far this year have been productive of results in stimulating buying among farmers. Equally important to the volume of sales made is the evidence given that the farmers show little declining interest in motor vehicles and will enter the market in numbers when their conditions warrant it.

Closed Magnetic Circuit in Primax Ignition Coil

CHICAGO, Oct. 1.—An ignition coil with a closed magnetic circuit has been placed on the market by the Primax Co. The primary winding is formed of two flat coils of copper ribbon, one at each end of the secondary. Both the primary and secondary coils are mounted directly on the core, which latter is built up of thin sheets of transformer iron.

A condenser of suitable capacity is mounted inside the case. An advantage claimed for the closed magnetic circuit is that it permits of producing a greater maximum number of sparks per second. High efficiency of operation is claimed to result from the low resistance of the ribbon primary winding.

Making Platform Planks for Political Parties

NEW YORK, Oct. 3.—Transportation and highways are two topics which are being given major attention by the Platform of Industry Committee of the National Association of Manufacturers, which is attempting to formulate a set of industrial planks to be recommended to both Democratic and Republican parties for incorporation in their 1924 platforms. A series of conferences are under way at present between various industrial leaders who are members of the association.

The drafting committee, headed by W. B. Storey, president of the Atchison, Topeka & Santa Fé Railroad, has submitted a report outlining five fundamental principles to be incorporated in five definite planks. These planks would deal with transportation, highways, waterways, taxation, immigration and judiciary.

The conferences will extend through next summer. No detailed statement concerning the planks is likely to be available before May, 1924, but the National Association of Manufacturers will welcome any suggestions or comments from the automotive industry concerning those phases of the program with which it is specially concerned.

MAXWELL-CHALMERS RECORD

DETROIT, Oct. 1.—Announcement is made by the Maxwell-Chalmers officials that 8500 Maxwell and Chalmers cars were shipped during September, setting a new record. The previous best was 8000 in May.

Gasoline Exhaustion Timed for 20 Years

Retiring Head of Mining Congress
Predicts End at Present
Rate of Use

MILWAUKEE, Oct. 1.—An investigation by the Wisconsin department of markets at Madison of the gasoline situation developed, among other facts, that the gasoline supply of the United States increased during the past year from 1,500,000 bbl. daily to approximately 2,225,000 bbl. This was brought to light by the testimony of John D. Clarke, vice-president, Standard Oil Co. of Indiana, one of the principal witnesses called by the department.

Clarke said only a part of the increase has been due to the new wells opened in California, although that State jumped in production from 350,000 bbl. of mediocre crude to 850,000 bbl. of a much better quality during the year. Until this year no California oil reached the Middle West.

Seventy per cent of the gasoline sold in Wisconsin by Standard Oil comes from Casper, Wyo., refineries, Clark testified, but the cost is figured on the basis of freight rates from Whiting, Wyo.

Wisconsin is the most attractive market, although Clark admitted gasoline from Whiting or Sugar Creek could be obtained at a lesser cost. The Wyoming crude is cheaper, but the difference in freight rates is at least 2 cents a gallon. The Whiting base on freight rates is used, he said, because there had been no occasion to readjust rates since the change of supply was made.

Mining Congress Meets

While the investigation is under way at Madison, the American Mining Congress has been in annual session at Milwaukee. Speaking of the gasoline situation, Sidney J. Jennings, vice-president of the U. S. Smelting & Refining Co., New York, retiring president of the congress, said oil wells of the United States will be exhausted in twenty years, or less if the recent increase in consumption continues. Most of the petroleum has been consumed in the past thirty years.

Jennings said, however, that gasoline will be replaced by alcohol or some other substance manufactured in the laboratory, while lubrication for the wheels of industry will come from the immense supply of oil shale. So far the plentiful supply of petroleum has made it unnecessary to utilize the shale.

IDEAL TIRE PLANT SOLD

CLEVELAND, Oct. 2.—The plant of the Ideal Tire & Rubber Co. has been sold to the National Mortgage Co. in this city for \$197,963. The plant, a mammoth affair, and ten acres of ground in the southern part of the city were included in the sale. The personal property was sold to H. Muehlstein & Co. of Akron.

REPORTS FROM SOUTHERN CITIES VARY

Atlanta

ATLANTA, GA., Oct. 2.—Automotive sales in the Atlanta territory have continued to hold up on a par with the volume earlier in the summer, with a majority of dealers and distributors convinced that there will be little decline during the fall months, and an unusually good demand this year for closed cars.

The volume of sales recently has been especially good in the smaller towns and among the smaller dealers in this district, due to the fact that cotton has been advancing steadily at the Southern markets the past month, with rural trade more optimistic than it has been in years.

The price last week reached 30 cents in Atlanta, which is an increase of more than \$200,000,000 in the total value of this year's crop over the figures of one month ago.

Cars on which price cuts have been announced recently have experienced a sudden increase in sales in this territory, with the result that dealers are unable to meet the full demand for immediate delivery.

Distributors of medium priced and lower priced cars are all sold well ahead, with dealers throughout the entire district demanding 15 to 20 per cent more deliveries than distributors are able to give them.

Louisville

LOUISVILLE, KY., Oct. 2.—Sales in Louisville are beginning to slow down. Dealers are trading carefully, with most of them in good condition as to used car stocks on hand. The experience of the last year or two, when heavy stocks were carried through the winter months, has taught a lesson of caution in this respect.

More attention is now being paid to used car sales than formerly. This was caused during the current season partly because dealers in the most popular makes and fastest moving lines were unable to get new cars, and were, therefore, forced to get to work on used cars or do nothing. Many of the dealers now have a separate sales force for used cars.

Generally speaking, the condition of the Louisville trade as a whole is very satisfactory. The major dealers as a whole are expected to show a clean slate on the used car proposition at the end of the year.

Birmingham

BIRMINGHAM, ALA., Oct. 2.—Retail sales of automobiles in the territory served by Birmingham have been increasing steadily for the last six weeks. This is due to the season of the year, with the summer vacationists returning for the winter, and to the introduction of new models and new prices.

On the whole retail sales are ahead of sales during the summer, and about on a par with those of the past spring, when new records were made.

The used-car situation was greatly improved during the summer months, many of the firms were able to get rid of practically their entire stocks, and practically all of them reduced the number they were carrying. Used cars at present are being accumulated, however, due to the number of sales with trade-ins that are being made.

Conditions for the future are uncertain, but for the next two months, at least, the sale of cars should not be greatly affected. Seven Alabama furnaces have been closed down within the last two months. Six of these were blown-out during the past month, and three the past week.

This indicates the condition of the pig iron market, with prices considerably off and orders not sufficient for full production. The lumber market has improved to an extent, and orders are coming in in good proportion to the high-water mark of last winter. Other industries are not suffering to date.

Dallas

DALLAS, TEX., Oct. 2.—A considerable spurt was noticeable in the automobile business in Texas during September. The number of cars sold at retail showed an increase of 16 per cent over those of August, and 25 per cent over September, 1922.

Dealers attribute the increased sales and the better business generally to the moving of a \$500,000,000 cotton crop in Texas. A large increase is reported in the number of sales made in the rural districts.

According to statements coming from a score of dealers scattered over the state the average price of the new cars being sold is around \$1,000.

There was a considerable volume of trade-in business during the month. Some of these trade-ins were for a specific consideration, the dealer taking the property absolutely.

Columbus

COLUMBUS, OHIO, Oct. 2.—Demand for passenger cars during September held up extremely well, although there was a slight decline over that of six weeks ago or two months previous.

Cars selling from \$800 to \$2,000 are the best sellers at this time with those ranging from \$200 to \$3,500 going fairly well.

Traded-in cars are moving well, but prices are not as low as might be expected. Inventories of dealers as far as used cars are concerned are generally satisfactory.

Demand in farming sections has improved slightly with the harvesting of a heavy wheat crop.

Baltimore

BALTIMORE, Oct. 2—Price reductions on new cars announced during the last few weeks by some manufacturers have resulted in slowing up the demand to a considerable extent in this territory. Some of those associated with the trade declare that these reductions have been directly responsible for the loss of a large volume of business.

They find that the public will not respond until it is satisfied that there will be no further price cutting. Conditions generally are good with work plentiful and the public apparently having money to spend.

Compared with the dullness of the new car market the used car business is unusually good. In fact it is much better than many dealers had anticipated. Due to activities of the Baltimore Automobile Trade Association the dealers are not heavily stocked with used cars,

Seattle

SEATTLE, Oct. 2.—Sales of cars generally during September were not as good as during the previous month. In addition to the usual slowing down of sales the lower priced cars have been affected for the reason that prospective buyers feel that in view of certain price reductions made in some cars other reductions can be expected.

They are also waiting until the talk about new models clears up. Sale of cars this September has been greater than last September and the higher priced cars are moving well, considering the month.

The used-car market is conforming to the general situation and some of the dealers are accumulating a surplus.

Detroit

DETROIT, Oct. 2.—Poor conditions in the used car market, both in Detroit and in the State, will mean curtailed new car sales in this district, at least for the present.

Dealers report interest in new models and declare much business could be done were it not that buyers seek allowances on trade-ins which in the face of changing models and lower prices cannot be considered. Lower prices in several of the lower priced lines have attracted many buyers who otherwise might have bought used cars, dealers assert, this adding to the difficulty of making sales in a slow used-car season.

All dealers have supplies of used cars so that the check in business is general. Attractive prices have been set and vigorous campaigns are being waged to get the used stocks moving.

On the whole dealers are of the impression that heavy buying is through for the year and, unless used cars can be taken in at new fair values, that business will be slow.

DEMAND UNEVEN IN EASTERN CITIES

New York

NEW YORK, Oct. 2.—Dealers in the metropolitan district are feeling a reaction from the heavy passenger car sales of the first three quarters of the year. September was a dull month except for a very few makes of cars which had previously announced striking changes in design. Now, October is under way with indications that the percentage of people "sold" for 1923 is heavier than had been anticipated.

The great majority of prospective buyers in the low and medium priced classes are owners of used cars which they will trade if they can get sufficiently tempting allowances but which otherwise they will hold on to until spring, or at least until after the mid-winter shows.

One distributor of a line which sold well all spring and summer reported the outlook among 90 per cent of his dealers as bad, but his case may be taken as extreme, inasmuch as he is selling a car which has not yet brought out 1924 models, while most of his competitors have radically new jobs.

On the other hand, the distributor of a car which has made only slight changes in its line did a better business, without any closed cars to deliver, than in 1922, and October prospects are bright.

There are a few lines which for a year or two have been leaders in sales whose dealers are suffering most from shortage of cars. Their September business was poor and October business will not be much better because they cannot make deliveries, particularly of closed cars.

Philadelphia

PHILADELPHIA, Oct. 2.—Sales generally are holding up remarkably well among local dealers and except in a few isolated cases there has been nothing that could be construed as a falling off last month.

Dealers in the higher grade cars especially have small stocks of new automobiles on hand. One local concern reports that it is entirely sold out of open models and cannot get closed ones fast enough to make thoroughly satisfactory deliveries.

Efforts are being concentrated on moving the few remaining open models so they will not have to be carried over. Some of the higher grade car dealers and distributors assert that in September they have booked more orders from their country dealers than for the two previous months, which indicates that the farmers, now that their hardest work of the season is about over, with receipts in for most of their crops, are starting in seriously to buy and are in a more receptive mood to listen to salesmen than earlier in the season. Some houses are taking this as the key for re-

doubled energy on the part of their sales forces in rural territory.

The used car trade conditions are less healthy than those of the new car trade and in not a few cases there are disappointingly large stocks on hand.

Buffalo

BUFFALO, Oct. 2—The demand for automobiles during September fell off a little in this city as compared with the corresponding month of last year, and was confined largely to closed models. Dealers handling the more popular makes reported that they were unable to get from their factories closed cars enough to supply the demand. There was not much call for open cars in any price class during the month.

Used cars of the lower priced class were reported to have moved readily during September with the outlook for a good demand during October. The used car market for high priced cars was reported to have been stagnant for the last six weeks.

Boston

BOSTON, Oct. 2.—Motor car dealers in Boston find that the letup in buying that set in the latter part of August has passed, and from now until just before the holidays they expect to do a good business. It seems that after making comparisons with a year ago the bit of a slump this year was not so serious.

September began well and has continued, and now the fall trade is brisk with the demand for closed cars coming faster than it can be supplied.

The price changes had not made any great difference here. Nor have the announcements of new cars. But the four-wheel brake really has caused a letup for some dealers, whose salesmen tell them that buyers are holding off until they can get assurances that the makers will not add four wheel brakes in a week or a month after they buy.

Des Moines

DES MOINES, IOWA, Oct. 3.—September saw a noticeable slowing down in the automobile business in the Des Moines territory as compared with the previous months. A survey of the leading dealers and distributors indicates that September business was about 75 per cent of that done in August and about even with last September.

A portion of the letdown is attributed to seasonal conditions, but heavy rains and impassable roads have had a decided bearing on the slowing up.

In addition to the direct effects of rain there is another condition which is causing more or less apprehension among the farmer buying public. Rains have held the corn back so much that there is a great deal of soft corn which will require two or three weeks of dry, warm weather to mature.

Chicago

CHICAGO, Oct. 2.—Decided improvement in automobile sales in Chicago has been noted in the last two weeks as compared with August and the early part of September.

This improvement, however, is not general to the extent that all lines have benefited by it. On the contrary, some lines not in the class of greatest popular favor are practically at a standstill or going backward. In general these are the lines whose models designed for the 1924 season show little or no change from the 1923 line, although there are exceptions to this condition.

On the whole sales of new cars are below the mark of two months ago, but better than a month ago and fully up to what might reasonably be expected for this season.

Used cars are at a very low price level and consequently successful dealers find it necessary to hold down trade-in allowances. Some dealers, in order to make sales, are making allowances out of line and causing some disturbance in the trade. Dealers who have been conservative in taking in used cars are finding it fairly easy to move them without loss and in many cases at a profit. Used closed cars are in good demand. Truck sales, especially of the lighter types, are improving.

Milwaukee

MILWAUKEE, Oct. 2.—Almost without exception Milwaukee dealers report that the number of sales made in September was in excess of those in August, while in comparison with the ninth month in 1922, increases varying from 35 to 225 per cent are reported. The highest figure is that of the two principal low-priced makes and the lowest is that of the highest-priced American made car.

The situation at the close of September was such that, speaking in a general way, the majority of dealers expected to experience a slowing down in October, while the remainder do not look for any sharp falling-off in demand until after Nov. 1 or 15. The bulk of sales in September continued to be in the industrial centers rather than in the rural districts, although farm buying was heavier than had been expected by even the most enthusiastic.

In the final analysis it can be said that the best demand is for the makes of cars which have recently announced new models. On the other hand, it is true that some prospects have backed away temporarily, expressing the opinion that they desired to await the results of the radical changes effected in design. The enthusiasm of owners who have acquired cars with, for instance, four-wheel brakes, is exuberant and helping to get dilatory prospects in line.

BANK CREDITS

Written exclusively for AUTOMOTIVE INDUSTRIES by the Guaranty Trust Co., second largest bank in America.

General business conditions showed further improvement last week, in spite of continued irregularity in the stock market and a slight recession of commodity prices.

Both wheat and corn registered substantial gains, while cotton fell off from 29.75 to 29.50 cents a pound.

Reports so far indicate that buying of iron and steel in September was little, if any, better than in August. Prices of pig iron continue to show weakness, particularly in the South. Bookings of steel castings in August by companies representing about two-thirds of the country's capacity were 50,515 tons, as compared with 52,066 in July.

Production of crude petroleum during the week ended Sept. 22 averaged 2,242,700 barrels daily. This compares with a daily production of 1,507,050 in the corresponding week last year, but marks a decline of 32,250 barrels a day from the preceding week.

Professor Irving Fisher's index of wholesale commodity prices declined last week to 155 from the figure of 156 maintained in the preceding two weeks. Bradstreet's food index receded from \$3.32 to \$3.28—the first decline in two months.

Bank debits to individual accounts reported by the Federal Reserve Board for the week ended Sept. 26 amounted to \$8,838,994,000, a decline of 9 per cent from the preceding week, but an increase of 4 per cent over the corresponding period in 1922.

Discounts by the Federal Reserve banks increased \$87,800,000 during the week ended Sept. 26, \$77,500,000 of the gain being in bills secured by Government obligations and \$10,300,000 in "other bills."

Loans of reporting member banks increased \$51,000,000 in the week ended Sept. 19. Of this increase \$36,000,000 was represented by loans secured by stocks and bonds and \$14,000,000 by loans secured by Government obligations.

Call loan rates were firm last week, opening at 5½ per cent, ranging from 5 to 6, and closing at the latter figure on Monday of this week. Time money was strong at 5½ per cent, with the longer maturities moving at 5% in the middle of the week.

Hydraulic Pressed Steel Will Readjust Finances

CLEVELAND, Oct. 2—Stockholders of the Hydraulic Pressed Steel Co. and note-holders have appointed a committee to recommend a plan for readjusting the financial structure on which the company stands.

Hydraulic has earned more than note interest in the last five months, and it is understood that it is in position to meet the November installment, but it is \$1,000,000 in arrears in preferred stock dividends, and on this account some plan

is needed to provide additional working capital.

This condition is attributed largely to over-expansion during the war in order to take care of orders that were poured in by the Government.

The meeting in this city was attended by three representatives of the 8 per cent noteholders, three of the preferred stock owners and three of the common stockholders, with T. E. Quinsberry of the security firm of Howe, Quinsberry & Co. of Chicago as a neutral member. These ten men have been called together by company officials to cooperate in the drafting of a plan to reorganize finances.

Court Rules for Hayes in Wheel Patent Suit

DETROIT, Oct. 2—The suit by the B. F. Goodrich Co. and Kelsey Wheel Co. against the Hayes Wheel Co. and James F. Wagenhorst, for infringement of patents, was dismissed by Judge Tuttle in Federal Court here this week, the court ruling there was no infringement.

It was alleged in the suit that wheels made by Hayes violated three patents held by Goodrich and licensed to Kelsey covering the internal part of the wheel, the rim and the process by which the spokes are made fast.

In hearing the case Judge Tuttle had a part of the basement of the Federal Court Building rigged up as a section of a foundry and wheel plant where he watched the process of wheel-making as demonstrated by the opposing sides. The history of wheel-making was gone into in the course of the hearing.

It was shown that Wagenhorst had invented a wheel with an entire steel rim when it was found that wagon wheels with wood felloes would not stand up under automobile strain. This wheel had no hub, the spokes being wedged in place.

Goodrich acquired these patents and licensed Kelsey to manufacture. It was testified that Wagenhorst later was employed by Hayes and began turning out a similar type of wheel, which it was claimed, infringed three patents. Expert testimony showed how the methods of manufacture varied, resulting in the court determining that there was no infringement.

Goodrich Makes Statement

AKRON, Oct. 4—The following statement was issued today by the B. F. Goodrich Co. regarding the decision in the suit brought against the Hayes Wheel Co. and others:

"In a suit brought by the Kelsey Wheel Co. and the B. F. Goodrich Co. against the Hayes Wheel Co. and others in the United States District Court at Detroit, Judge Tuttle held, in a decision rendered Sept. 29, that the patent in suit was not infringed by the defendant's process. The complainants gave notice of appeal, and the decision will be referred to the United States Circuit Court of Appeals at Cincinnati for review at the earliest date possible."

FINANCIAL NOTES

Nash Motors Co. reports net earnings, after all deductions, of \$2,257,767 for the quarter ending Aug. 31, which is equal, after preferred dividends, to \$7.22 a share on the 273,000 shares of common. Net earnings for the first nine months of the fiscal year were \$6,399,414, equal to \$20.25 a share on the common. The third quarter compares with the net of \$2,568,405 for the quarter ending May 31 and \$1,573,241 for the previous quarter. The company also has declared its regular quarterly dividend of \$1.75 on the preferred, payable Nov. 1 to stock of record Oct. 19.

Yellow Cab Manufacturing Co. has decided to declare a 100 per cent stock dividend on the entire capitalization, and to pay monthly dividends of 33½ cents a share on the increased capitalization. A meeting of stockholders has been called to ratify the increase. President John Hertz states that the company has a surplus of \$2,259,259 and that the earnings for the first six months of 1923, with an average of 1652 cabs in operation, were \$5.20 a share.

Mack Trucks, Inc., reports estimated net profits of more than \$1,500,000 or \$4.25 a share, on the 283,109 shares of common, after preferred dividend requirements, for the quarter ended Sept. 30. This compares with net profits of \$2,523,543, or \$7.92 a share reported in the preceding three months, and a net of \$1,514,932 in the first quarter. For the nine months this total is approximately \$5,500,000, or \$16.50 a share on the common.

Chandler Motor Car Co. has increased its output this year 50 per cent over last year. The production will run 15,000 cars, as compared with 10,000 a year ago. The earnings in the first seven months were equivalent to about \$6.50 per share on 280,000 shares of stock after nominal charges and taxes. Indications point to \$9 per share for the entire year of 1923.

Milwaukee Stamping Co., West Allis, Milwaukee, has increased its capital stock by \$100,000 by raising the common stock from \$500,000 to \$600,000. The concern manufactures metal stampings, hardware specialties, etc., and does an exceptionally large business with automotive industries. August J. Petrie is president and general manager.

Fifth Avenue Coach Co. of New York City reports income available for dividends for twelve months ended June 30, 1923, of \$1,277,052 compared with \$1,167,935 for the preceding year. Gross revenue was \$5,710,568, an increase of \$320,315. In the fiscal year reported, the company carried 55,973,830 revenue passengers.

Kelly-Springfield Tire Co. has declared its regular quarterly dividend of 2 per cent on the 8 per cent preferred stock, payable Nov. 15 to stock of record Nov. 1.

Indiana Truck Corp. has declared the regular quarterly dividend of 1½ per cent on its preferred stock, payable Oct. 1 to stockholders of record Sept. 29.

Firestone Tire & Rubber Co. has declared its regular quarterly dividend of 1½ per cent on the 6 per cent preferred, payable Oct. 15 to stock of record Oct. 1.

Hupp Motor Car Corp. has declared its regular quarterly dividend of 2½ per cent on the common, payable Nov. 1 to stock of record Oct. 15.

Fisher Body Co. has declared its regular quarterly 2½ per cent common dividend, payable Nov. 1 to stock of record Oct. 20.

Owners Tell of Use They Make of Cars

Very Small Number Employ Them Exclusively for Recreational Purposes

NEW YORK, Oct. 3—Ten thousand owners in ten different States were asked by the National Automobile Chamber of Commerce to fill out a questionnaire, telling the different uses to which they put their cars. One thousand answered, giving a graphic cross-section of the completeness with which motor transportation has been adapted to every phase of human activity.

The States included in the survey were Alabama, California, Illinois, Iowa, Massachusetts, New York, Oklahoma, Pennsylvania, Texas and Wisconsin. Of those owners replying, only thirty use their cars exclusively for recreation.

Majority Drive to Work

Fifty-two per cent use them for driving directly to work and 7 per cent more for that purpose in conjunction with the railroad. Forty-six per cent use cars daily in business, while 36 per cent more said that the car was used occasionally for this purpose. This total of 82 per cent does not include the business use of the car in shopping or in driving to and from work.

Summarizing the survey, the N.A.C.C. says:

There was quite a wide variation in the replies from different sections on certain points. The Eastern seaboard for instance, does comparatively little motor camping, only 13 per cent of the cars being thus employed in Massachusetts, 18 per cent in New York, 9 per cent in Pennsylvania, whereas in California the figure is 46 per cent and in Iowa and Texas 34 per cent.

The South heads the list of those using cars for going to church, with a total of 81 per cent in Texas and 74 per cent in Alabama; while California here is at the bottom with 29 per cent and Massachusetts, New York and Pennsylvania are also under the 50 per cent figure.

Much Long Distance Touring

These responses show that the outdoor life opportunities afforded by the automobile are approximately as important as its use for economy and efficiency in transportation. Long distance touring, while by no means the chief purpose of the car, is indulged in by 51 per cent of these witnesses. More than 50 per cent of these responses, too, stated that the cars are used for picnic purposes, while the average of cars used for motor camping was 20 per cent. Fifteen volunteered the information that they employed their automobiles for hunting and fishing, and a number state that it enables them to have a home in the suburbs.

Sometimes the owner feels that he does not get much out of his transportation, as in the case of the father who wrote in that his son used the car all the time to take young ladies driving in the evening. On the other hand, there are some who apparently do not care for evening driving, as only 68 per cent of the total indicated that they operated their cars after sunset.

The most overworked hired man in fact or fiction never did more odd jobs on the modern farm, judging from the replies of the fifty-two farmers who answered the survey. They report using the automobile to supply power for sawing wood, to haul supplies from the city, to carry dressed meat to market, to transport watermelons, peas, peanuts and sugar cane, to take grain to the mill, to bring cows from the pasture, to transport laborers from the city, to haul cream to the station, to take water and ice to the workers in the fields, to pull stumps, to carry the family to church and take the women to their social clubs.

The greater part of transporting children to school by motor vehicle, especially in the country, is at public expense in motor buses operated for the purpose. However, 18 per cent of all the replies stated that the family car was used for taking children to school.

The Chamber states that in the main the replies are representative of the nation, as they are fairly proportionately distributed among the States to which queries were sent. A qualifying factor, however, is that most of the answers came from small towns and cities, so that the results may not represent as closely the situation in large cities and suburban areas.

INDUSTRIAL NOTES

Selflock Nut & Bolt Co., Inc., of East Syracuse, N. Y., manufacturer of friction fit nuts and bolts, has entered into a contract with the Bethlehem Steel Co., Bethlehem, Pa., for the manufacture and sale of carriage and machine bolts, track bolts and heavy railway nuts and bolts. The company also will increase its own facilities and specialize on S.A.E. Selflock products as well as cap screws with Selflock threads.

Norman Piston Ring Manufacturing Co., organized originally in Peoria, Ill., has been removed to Rock Island, Ill., and the manufacture will hereafter be carried on at the latter city. The officers of the company are as follows: President and treasurer, H. M. Jerome; vice-president, H. F. Mason and secretary, J. L. Mason.

Perfection Heater & Manufacturing Co., of Cleveland, has again greatly increased its floor space to meet the manufacturing demands for Perfection heater equipment.

Hartz in Durant Wins 150-Mile Fresno Race

FRESNO, CAL., Oct. 1—Harry Hartz, driving a Durant Special, won the 150-mile race here Saturday with an average speed of 103.65 m.p.h. Eddie Hearn was second; Jerry Wunderlich, third, and Fred Comer fourth. All drove Durant Specials.

It was a Durant clean-up, and Californians had the opportunity for the first time to see the 122-cu. in. single-man cars. Tommy Milton and Earl Cooper failed to place, although they were first and second up to the 113th lap, each driving an H. C. S. Special. Broken water-jacket stopped Milton at the head of the procession in the 123rd lap, and Cooper was out for fuel at the 113th.

Bennie Hill's record for this track of 103.7 m.p.h. still stands.

METAL MARKETS

Full-finished automobile sheets form a notable exception from the general run of steel products, the market for which is either altogether neglected or soft. A leading Ohio producer of full-finished sheets has just completed putting under power the last of 20 sheet mills, the bulk of whose output goes to automotive consumers. It may be said that the steel industry as a whole today has on its books barely sufficient orders to keep it running three to four weeks.

Sheet mills have a backlog of orders probably averaging five to six weeks. Producers of full-finished sheets, however, appear to have enough orders on their books to keep them going until December. While prices have been fairly well maintained so far, no one would characterize the market as firm. In the case of many steel products it is merely polite moderation to call the market easy. As a matter of cold fact, it is in not a few commodities at the mercy of buyers, but the latter prefer buying in absurdly small tonnages to bargain-driving, in which they could easily succeed if they cared to buy even a few weeks ahead.

Sheets, however, with the possible exception of common black, are rather steady at previously named prices, and to the market for full-finished automobile sheets the characterization of firm may be safely applied. The market for bolts and nuts is no longer soft, it is ragged, sellers cutting under one another's prices in an effort to land what little in the way of orders overhangs the market. Cold-finished steel bars continue to be bought in small lots at 3.25 cents, Pittsburgh, although one interest is reported to be shading this price. Producers in many instances are still working up hot-rolled material that was bought before the \$3 a ton extra on screw stock became effective.

All in all, the demand for cold-finished bars is far from gratifying to the producers, the number of orders being large but the quantities named of retail proportions. Cold-rolled strip steel is much in the same position, although producers generally maintain the 5-cent base price, recognizing that concessions would not serve to bring out more representative buying. Semi-finished steel is irregular. Generally the \$42.50 quotation for sheet bars is adhered to, but transactions at a concession from this level are reported to have taken place.

The truth of the situation is that, with the exception of the automotive industries, consumers have turned their back upon the steel market. Amid this condition it is only natural that automotive steel consumers are not inclined to buy more than a few weeks ahead. There is no need of their doing so.

Pig Iron.—Sales of foundry iron are reported to have been made at concessions from the \$25, Valley, level heretofore in vogue. A sale of 1000 tons of malleable is reported to have been made at the equivalent of \$24, Valley. Many automotive foundries prefer to pay \$25 in small lots rather than buy a larger tonnage at this time at a possible saving of 50 cents or more per ton.

Aluminum.—Contracts for 1924 shipments are being placed slowly, it is reported. The sole domestic producer judges each inquiry upon its own merits and has no price for publication, but it is generally understood in the trade that 25 cents is the contract and spot price for 98 to 99 per cent pure virgin ingots. Few resale lots are left in the market, with the demand also light.

Copper.—The market continues feeble, with second hands apparently eager to liquidate at any price.

Calendar

SHOWS

Oct. 17-27—New York Electrical and Industrial Exposition, showing electric trucks, cars, parts and accessories, Grand Central Palace.

Nov. 4-10—New York, First Automobile Exposition of the Foreign Automotive Association, Hotel Astor.

Nov. 11-17—New York, Annual Automobile Salon, Hotel Commodore.

Nov. 12-17—Chicago, Manufacturers Auto Accessory Exhibit, First Infantry Armory, Robert M. Jones, manager.

Jan. 5-12 New York, Annual Automobile Show, under the auspices of the National Automobile Chamber of Commerce, Eighth Coast Artillery Armory.

Jan. 26-Feb. 2—Chicago, Annual Automobile Show, under the auspices of the National Automobile Chamber of Commerce, Coliseum and First Regiment Armory.

Jan. 26-Feb. 2—Chicago, Annual Automobile Salon, Hotel Drake.

FOREIGN SHOWS

Oct. 4-14—Paris, Passenger Cars, Bicycles, Motorcycles and Accessories, Grand Palais.

Oct. 15-20—London, Motorcycle Show, Olympia.

Oct. 24-Nov. 2—Paris, Trucks, Agricultural Tractors, etc., Grand Palais.

Nov. 1-15—Buenos Aires, Annual Automobile Exposition, under the direction of the Automovil Club Argentino.

Nov. 2-10—London, Automobile Show, Olympia.

Nov. 22-Dec. 1—London, Motor Transport Exhibition.

Dec. 8-19—Brussels, Passenger Cars, Trucks, Airplanes and Motor Boats, Aviation Palace.

RACES

Oct. 28—Barcelona, Spain, Grand Prix for vehicles of 1500 c.c.; Nov. 1, International Grand Prix for cycle cars of 1100—Nov. 4, International Grand Prix for two liter.

CONVENTIONS

Oct. 8-12—Pittsburgh, Convention of American Society for Steel Treating.

Oct. 8-15—Atlantic City, Convention of Electric Railway Association.

Oct. 24-26—Cleveland, Thirtieth Annual Convention of the National Association of Farm Equipment Manufacturers, Hotel Statler.

Oct. 25-27—Lake Mohonk, N. Y., Mountain House, Semi-Annual Meeting of the American Gear Manufacturers Association.

Nov. 12-17—Chicago, Annual Business Exhibit and Convention of the Automotive Equipment Association, Coliseum.

Nov. 21—Annual Meeting, Motor Truck Industries, Inc., Place of Meeting Not Decided.

Jan. 24-31—Chicago, Annual Convention and Show of the American Road Builders' Association, the former to be held in the Congress and the latter in the Coliseum.

May, 1924—Detroit, International Motor Transport Congress under the auspices of the National Automobile Chamber of Commerce.

S. A. E. MEETINGS

Oct. 11—Indiana Section, Low Pressure Air-Cushion Tires, J. E. Hale, Severin Hotel, Indianapolis, 8 p.m.; Dinner, 6:30 p.m.

Oct. 12—Mid-West Section, Fundamentals in Engineering, C. F. Kettering, Western Society of Engineers, Chicago, 8 p.m.; Dinner, 6:30 p.m.

Oct. 18—Metropolitan Section, Brakes, H. M. Crane, Automobile Club of America, 247 West Fifty-fourth Street, New York City, 8 p.m.; Dinner 6:30 p.m.

Oct. 25-27—Production Meeting of the S. A. E.—Cleveland.

Oct. 29—Buffalo Section, Problems in the Construction of Low-Pressure Tires, J. F. Palmer, Statler Hotel, Buffalo, 8 p.m.

Oct. —Cleveland Section—No Meeting in October Because of National Production Meeting in Cleveland Oct. 25-27.

Nov. 15—Metropolitan Section, Commercial Air Travel, C. W. Warner.

Dec. 13—Metropolitan Section, Vehicles for Package Delivery.

Jan. 22-25, 1924—Annual Meeting of the S. A. E.—Detroit.

Feb. 14, 1924—Metropolitan Section, Vehicle Depreciation.

March 13, 1924—Metropolitan Section, Replacement Parts and Accessories.

April 17, 1924—Metropolitan Section, Fleet Maintenance, F. W. Winchester.

May 15, 1924—Metropolitan Section, What Roads and Steels Do to Automobiles.

Standardized Plane Control Is Urged

WASHINGTON, Oct. 1—Standardization of controls in all makes of airplanes has been recommended by a subcommittee on airplane structure of the Aeronautical Safety Code Committee, meeting with the Bureau of Standards. A tentative draft on the proposed standardization was drawn up by the committee and is being mailed this week to those interested in the aircraft industry for comment and criticism.

All airplanes will be required to have controls which operate in the same way, so that a pilot changing from one make to another will not become confused. Provisions are also included for suitable windows and openings for inspection of covered parts of the structure, strengthening and marking of parts by which the plane will be handled and factors of safety for the whole structure.

Those present at the meeting were: J. R. McAtee and George W. Trayer of the Forest Products Laboratory; H. L. Whittemore, Bureau of Standards; Leslie MacDill, Air Service; H. L. Dryden and A. Halstead, Bureau of Standards; J. G. Baukant, National Safety Council; J. R. Randolph, Bureau of Standards; E. P. Warner, Massachusetts Institute of Technology; Lieut. M. C. McCarthy, Navy Department; G. W. Lewis, National Advisory Committee for Aeronautics, and Lieut. E. W. Dichman.

MINERAL RUBBER OFFICERS

MOLINE, ILL., Oct. 3—The Mineral Rubber Co., through P. H. O'Brien, sec-

retary, has announced the erection of three additional buildings at a cost of \$40,000. Incorporation of the company with L. E. McKimm, president and general manager, is under way. A. G. Abraham will be vice-president, and R. S. Anderson, treasurer. McKimm has been vice-president of the Premier Tire & Rubber Co. of Kansas City and associated with the Goodyear and the Republic tire companies.

111,492 Vehicles Titled in Michigan in 8 Months

DETROIT, Sept. 28—New cars titled in Michigan from March 1 to Sept. 1, totaled 102,572, according to a report to members issued by the Michigan Automotive Trade Association. Of this, Wayne County had 39,828. New trucks registered in the same period were 8920, of which Wayne County took 3682. New cars in the State in August totaled 11,638, the Wayne aggregate being 5270. New trucks in August amounted to 1060, of which Wayne took 466.

In the totals for the six months period in the State, light cars predominated with an approximate total of 67,000. Sales in price class \$700 to \$1,000 approximated 7800. In the medium price field, \$1,000 to \$2,000 sales approximated 26,000. In the higher priced cars the total registered was approximately 1600.

3429 HUPPS SHIPPED

DETROIT, Oct. 1—Hupp Motor Car Co. shipped 3429 cars in September, the largest in its history and comparing with 3300 in September, 1922.

Export Sales Ratio to Output Declines

WASHINGTON, Oct. 1.—Analysis of production and export figures as compiled by the automotive division of the Department of Commerce show that the ratio of exports to production of complete trucks and passenger cars dropped from 8.9 per cent in July to 7 per cent in August as the result of an increase in production over that of July and a falling off in exports during this period.

As has been a common occurrence in past years, a general decrease occurred in the exports of automotive products during August. The total value of July automotive exports was \$15,565,076, while in August it fell to \$12,662,890, a decrease of 18.6 per cent.

The decrease was general throughout the various groups of automotive products with the exception of motorcycles, automobile and aircraft engines. The value of cars and trucks exported from Canada declined from \$2,421,734 in July to \$2,252,894 in August. The decrease in Canadian exports of cars and trucks was only 7 per cent, while that of the United States exceeded 24 per cent.

Although the passenger car exports to Australia decreased slightly during August, this country continues to purchase more cars than any other. In only three countries did the number of cars exported show an increase during the month. These were Argentina with 83 per cent increase, Spain with 76 per cent, and Japan with 40 per cent. By far the most noticeable decrease was in the shipments to Sweden.